

PATTERN MAGIC 3

Tomoko Nakamichi

Now in
English

PATTERN MAGIC 3

Tomoko Nakamichi

In this new addition to the Pattern Magic series from Japan, Tomoko Nakamichi teaches you how to sculpt with fabric, creating beautiful shapes, waves and accents. Next, she looks at creating dynamic movement in garments, using ruffles, shirring and precise, sharply pleated lines.

As throughout the series, all the patterns are based on a basic block, supplied in the book. All the scaling information you need to start pattern making is included. Thorough step-by-step instructions and diagrams will ensure that your own patterns translate beautifully to your choice of garment, while photographs of the finished pieces will inspire you to create your own designs.

With 144 photographs



£19.95

PATTERN MAGIC 3

Tomoko Nakamichi

Laurence King Publishing



Published in 2016 by Laurence King Publishing Ltd
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London EC1V 1LR
United Kingdom
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www.laurenceking.com

Pattern Magic 3 by Tomoko Nakamichi

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Original Japanese edition published by Bunka Publishing Bureau, Bunka Gakuen
Educational Foundation

This English edition is published by arrangement with Bunka Publishing Bureau, Bunka
Gakuen Educational Foundation, Tokyo, care of the Tuttle-Mori Agency, Inc., Tokyo

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A catalogue record for this book is available from the British Library

ISBN: 978-1-78067-694-4

English edition

Translated from the Japanese by Andy Walker

Technical Consultants: Rin Gomura and Chika Ito

Design: Mark Holt

Typeface: Sabon and Syntax

Japanese edition

Publisher: Sunao Onuma

Design and layout: Tomoko Okayama

Photography: Masaaki Kawada

Editing: Yukiko Miyazaki (BUNKA PUBLISHING BUREAU)

Tracing: Shikano Room

Proofreading: Hisako Sugita

Printed in China

Tomoko Nakamichi

Having served for many years as a professor at Bunka Fashion College,
Tomoko Nakamichi currently delivers lectures and holds courses on
pattern making both in her native Japan and internationally. This book
brings together the results of the research she has carried out on garment
patterns to help instruct her students. She is also the author of *Pattern
Magic*, *Pattern Magic 2*, and *Pattern Magic: Stretch Fabrics*. Tomoko
also enjoys creating the ball-jointed fashion dolls that appear in the
pages of this book.

Pattern Magic 3

For me, it's not all about pretty silhouettes.

What starts me drawing a pattern is the sight of something that I
find interesting or beautiful, and want to bring to life as a garment.

There's an irresistible pleasure in sketching out the lines over and
over, and seeking out their shape as I assemble them.

Sometimes, I'll put something together that I love, only to have
second thoughts a little while later and find myself back at my
drawing. I guess it's the little things that happen, the things I hear
and see on a daily basis, that make me work this way.

I'll go with what I have for now. Although, who knows, I could be
having second thoughts again soon...

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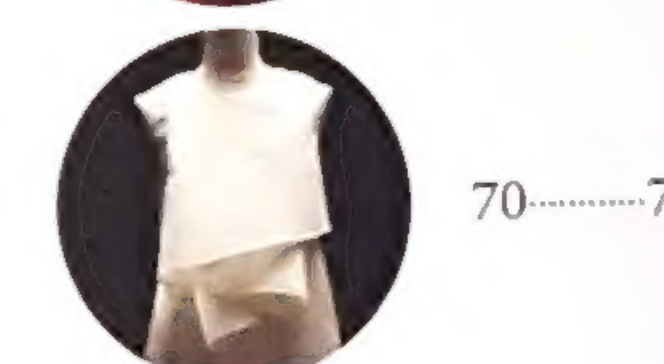
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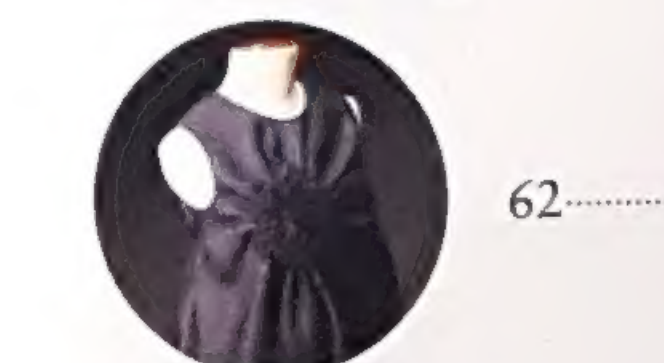


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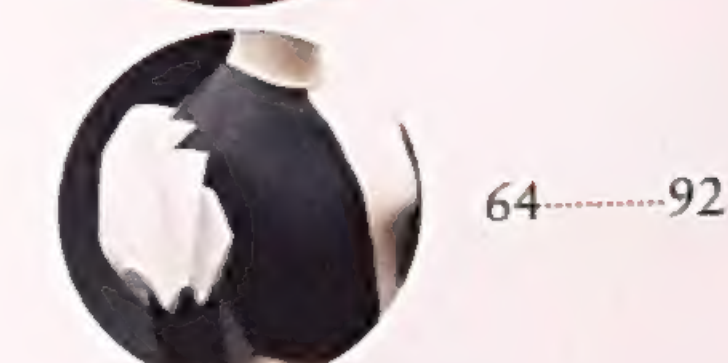


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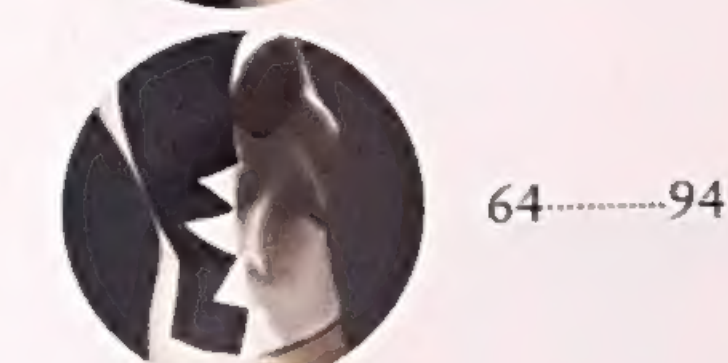
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Bunka-style sloper (block)*
for an adult woman (size M)
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*The dress form used as the basis for the designs in this book is the Bunka-style sloper (block) for an adult Japanese woman. See p. 98 for more details. All patterns are for a size M Japanese woman (bust 83cm, waist 64cm, and centre back length 38cm). The position of the cutting and opening out lines, the allowances, and other measurements may vary according to garment size. If you are using the half-scale dress form, reduce the full-sized measurements on the drawings by half when you develop the patterns.

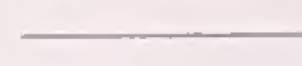

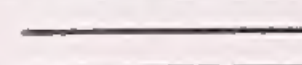
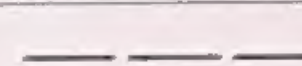
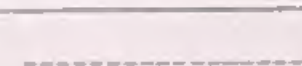
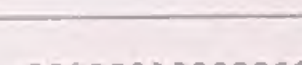
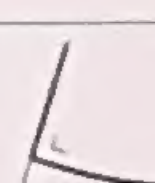



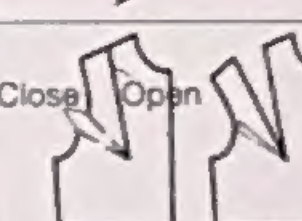

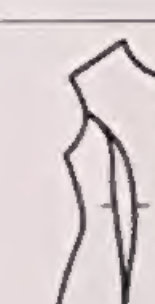
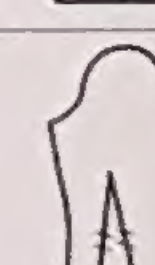
Using this book

All of the drawings and pattern manipulations for the garment designs in this book are based on the Bunka-style sloper (block) for adult women (Japanese 'M' size: bust 83cm, waist 64cm, centre back length 38cm), and a half-scale dress form for three-dimensional pattern manipulation. All of the measurements on this dress form are half those of a full-sized dress form; its surface area is scaled down to a quarter, and its volume to one eighth. Using a half-scale dress form helps you to understand better the overall balance and look of a garment. As my objective is to explain the construction of a pattern in an easy-to-follow way, I have omitted pattern markings such as the facing lines used for actually constructing the garment and the amount of fabric required to make the garment.

Abbreviations used in pattern drafting

BP
Bust Point
AH
Armhole
FAH
Front Armhole
BAH
Back Armhole
B
Bust
W
Waist
H
Hip
BL
Bust Line
WL
Waistline
HL
Hip Line
EL
Elbow Line
CF
Centre Front
CB
Centre Back

Symbols used in used in pattern drafting

Guide line		Line that acts as a guide when drawing other lines. Shown by a thin solid line.
Sector line		Line indicating that one line of a fixed length has been divided into equal lengths. Shown by a thin broken line.
Finishing line		Line indicating the finished outline of a pattern. Shown by a thick solid line or a broken line.
Cut on the fold		Line indicating where the fabric is to be cut on the fold. Shown by a thick broken line.
Stitch line		Line indicating where the fabric is to be stitched. Shown by a thin broken line.
Gathers		Line indicating where the fabric is to be gathered. Shown by a thin wavy line.
Right angle marking		Indicates a right angle. Shown by a thin solid line.
Line intersection		Indicates an intersection of the lines on the left and right.
Grain line		Indicates that the cross-wise grain of the fabric runs in the direction of the arrow. Shown by a thick solid line with arrows at each end.
Bias direction		Indicates the direction of the bias of the fabric. Shown by a thick solid line with arrows at each end.
Close and cut open marking (move the dart)		Indicates that a dart on the pattern should be closed and the pattern opened out from a pivot at the tip of the closed dart.
Marking to cut fabric with paper pattern pieces adjacent		Indicates that the paper pattern pieces are to be arranged contiguously when cutting out the fabric.
Join marking		Indicates where the fabric is to be sewn together.
Equal length marking		Indicates equal lengths.

Bring beautiful workmanship to your patterns

Authenticity is harder and harder to come by.

Civilization progresses, and things get easier and quicker to make. This is all very well, but we're losing certain things because of it. Gentle fabrics woven by hand-loom, elaborately worked handicrafts, uncompromising craftsmanship ... all things we no longer know how to do. I want us to see the authentic, to know and to touch it now, while we still can.

And I want us to learn to appreciate what it is that makes something authentic.



Sculpting a surface Instructions p. 24



Sculpting a surface Instructions p. 25



Making waves Instructions p. 30



Making waves Instructions p. 32



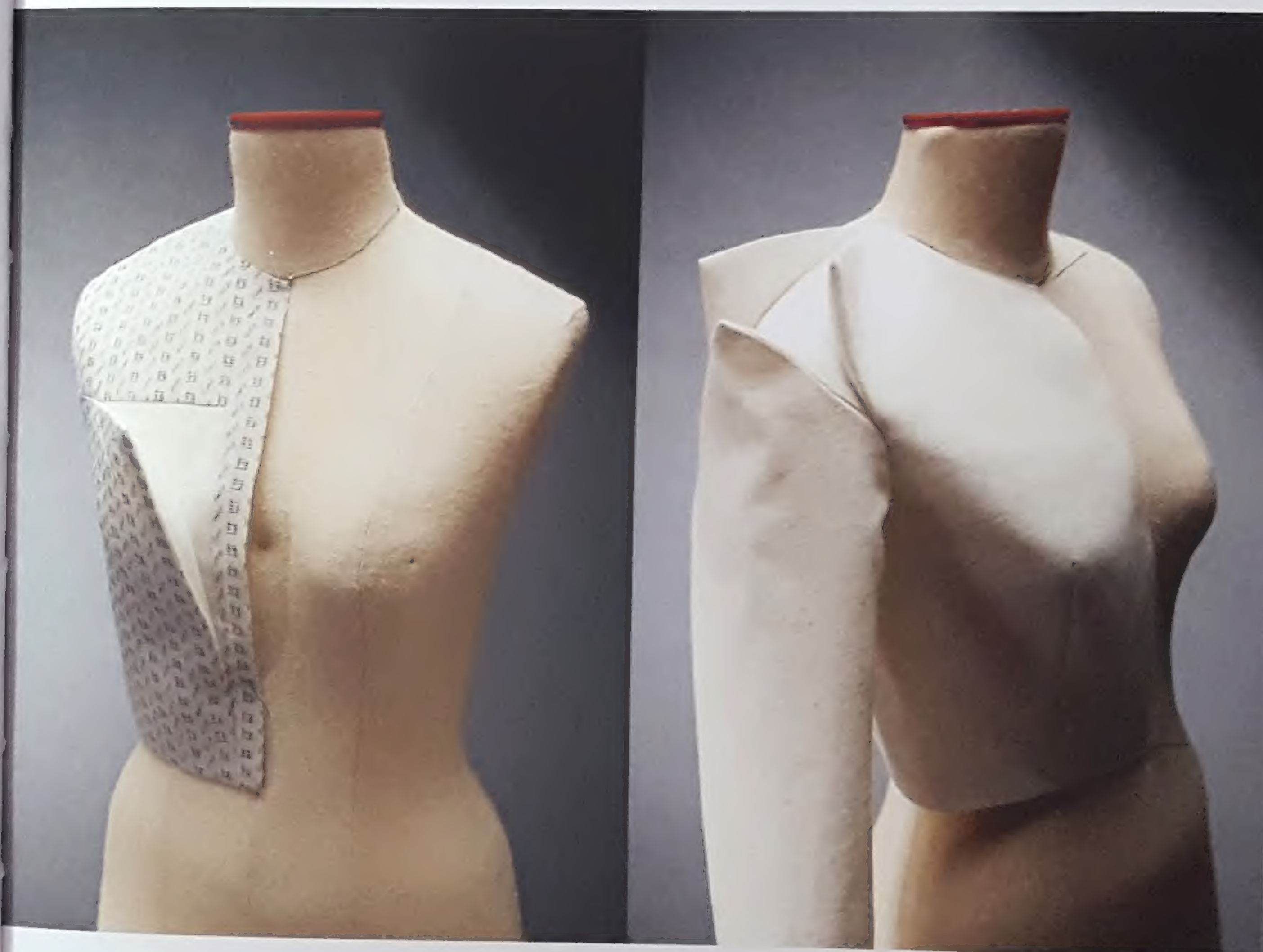
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Paring down and opening out Instructions p. 41 (left) p. 42 (right)



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Wearing a polyhedron Instructions p. 50



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Outlining a surface Instructions p. 56 (left), p. 57 (right)



PATTERN MAGIC

Making the patterns

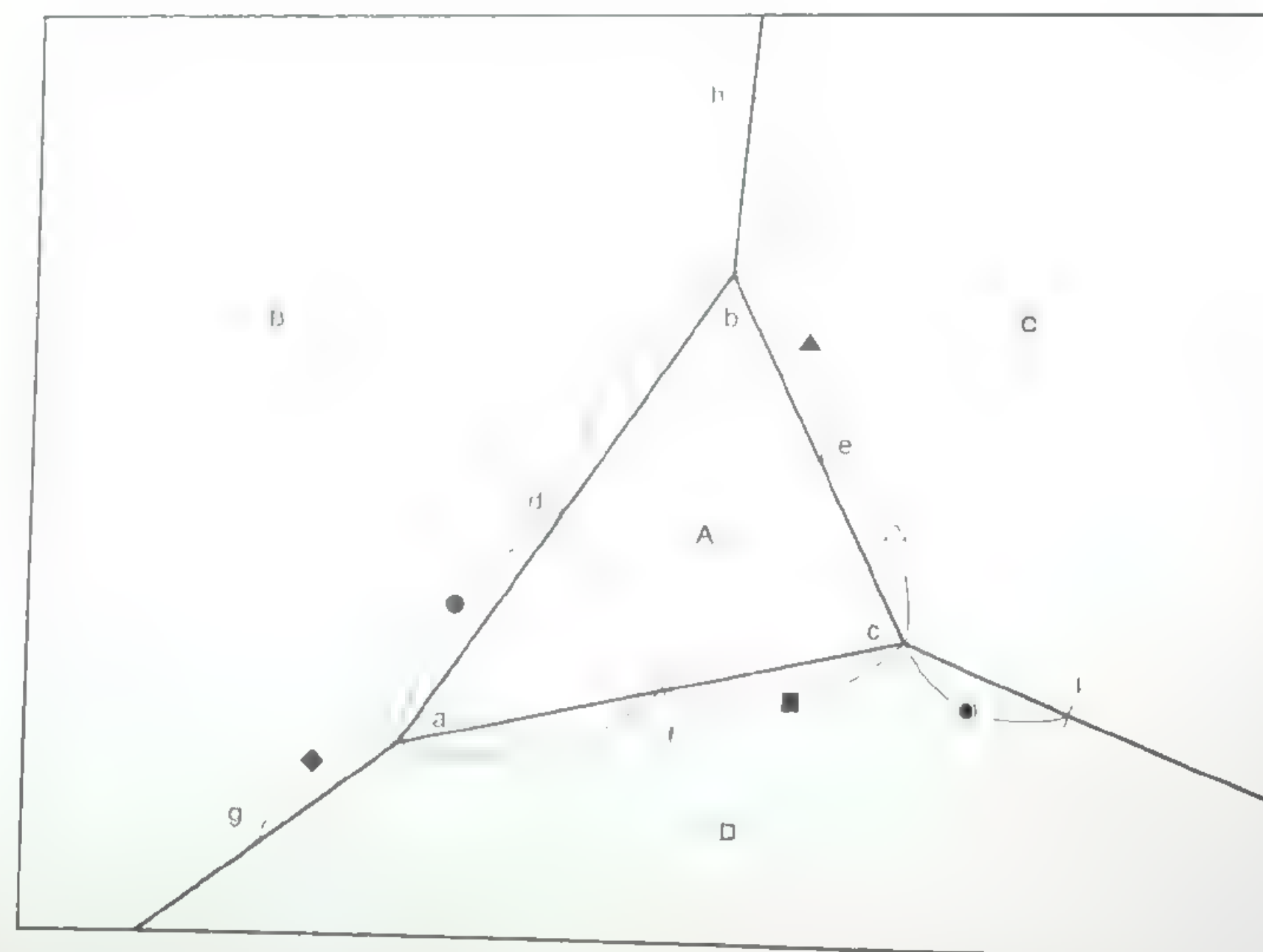
Two major objectives when making garments for women are that they fit properly, and also that they look attractive. For this reason, garment design will always be important as well as fulfilling.



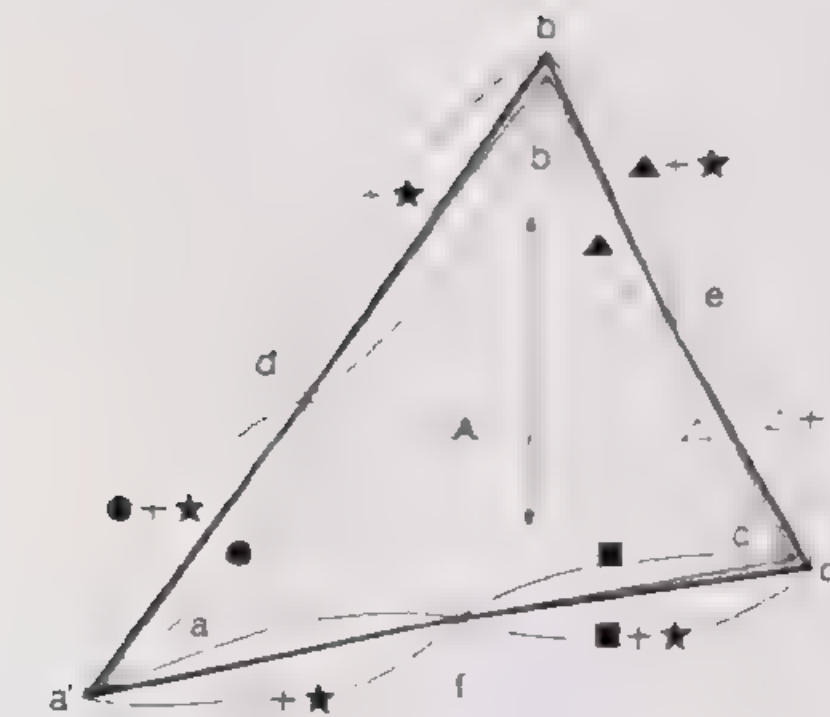
Sculpting a surface

The marks carved in wood by a chisel leave shadows that scatter reflections like the surface of water when light hits it, lending the wood a different kind of beauty from a surface that's been cut clean and flat. We'll try leaving the "strokes" in the fabric, like a piece of woodwork given a deliberately chiseled look.

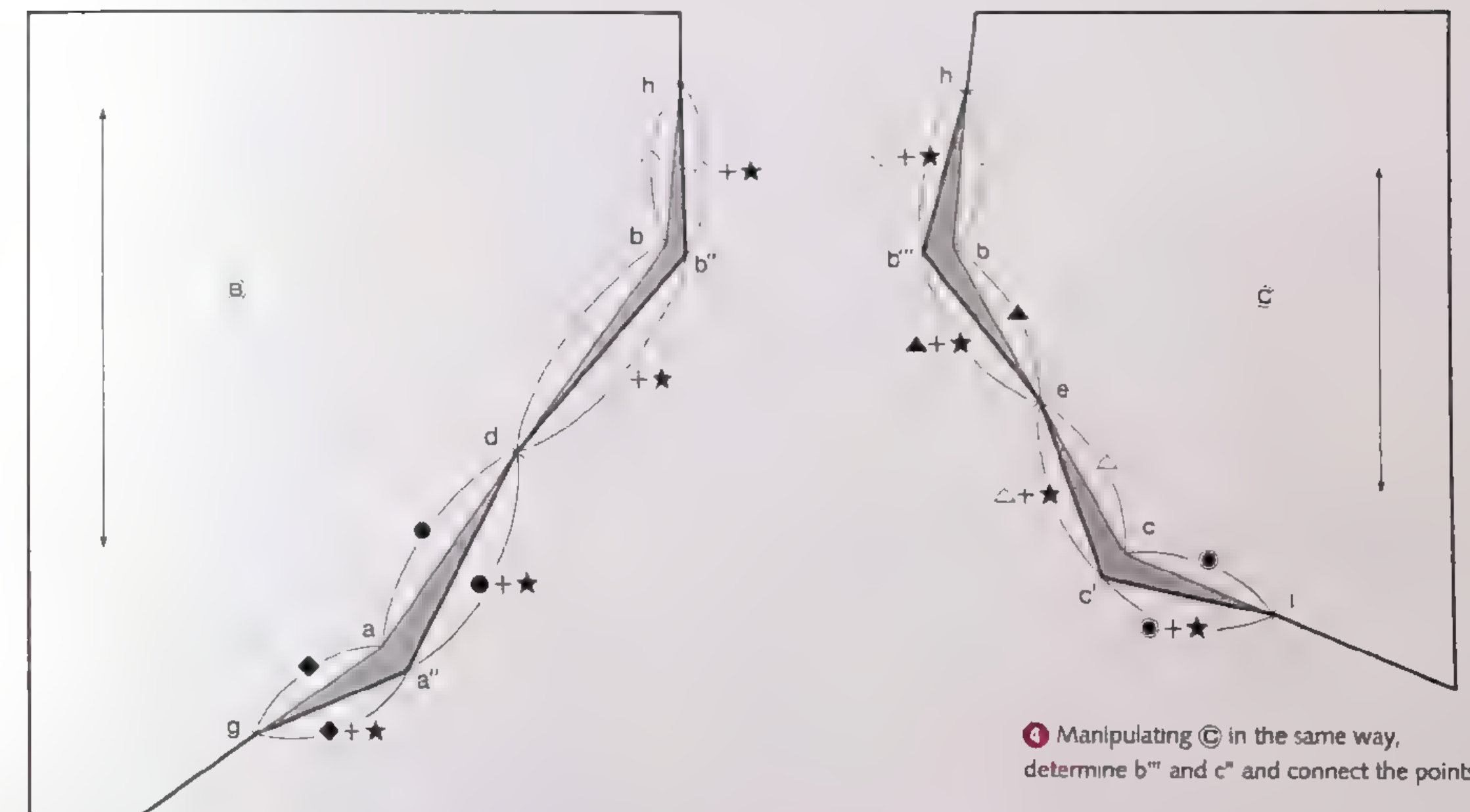
Basic technique



1 Draw a triangle abc. Draw lines from a, b, and c. Divide the pattern into panels A, B, C, and D. Draw d, e, f, g, h, and i as the starting points from which the fabric will protrude toward a, b, and c. Make the a to d measurement ●, and the other measurements ○, ▲, △, ■, □, ◆, ◇, and ●.

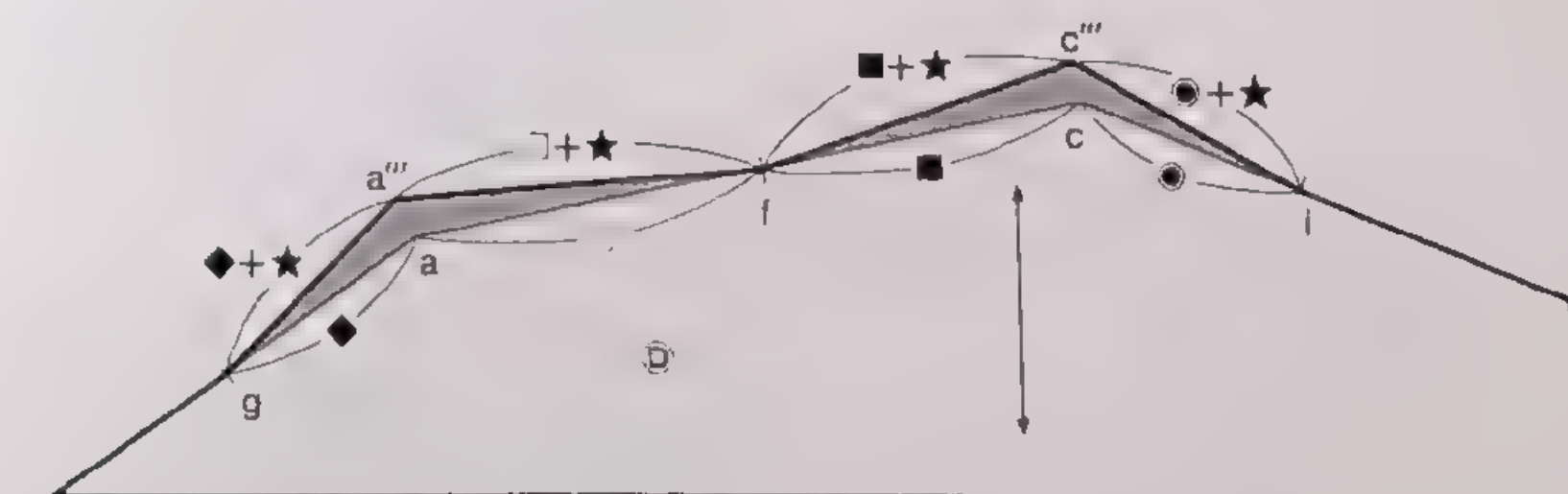


2 The measurements of the protrusions are marked ★. The bigger the measurement ★, the higher the protrusion. Manipulate A. Use a pair of compasses to measure distances (● + ★) from d and (□ + ★) from f, and call their intersection a'. Connect d, a', and f. Determine b' and c' in the same way and connect them.



3 Manipulate B. Working as in 2, determine a'' and b'' and connect them.

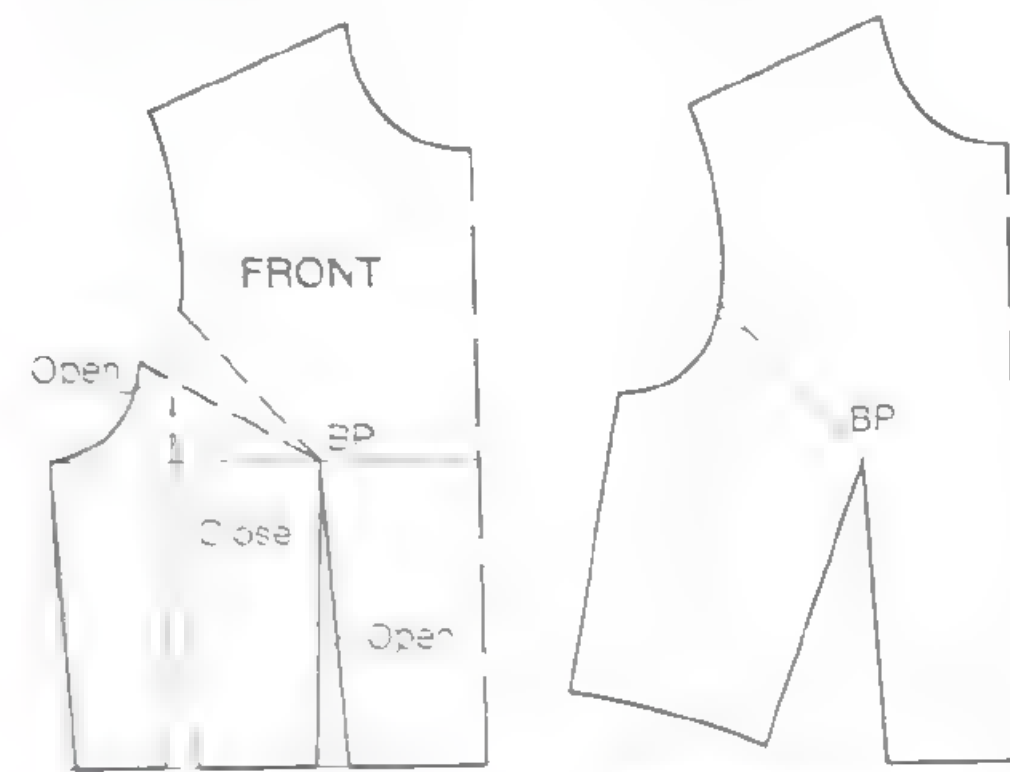
4 Manipulating C in the same way, determine b''' and c''' and connect the points.



5 Manipulating D in the same way, determine a''' and c''' and connect the points.

Sculpting a scaly surface

Shaving wood with a broad, rounded chisel blade creates a scale-like effect. We'll try to express this in fabric across the entire front bodice sloper (block).

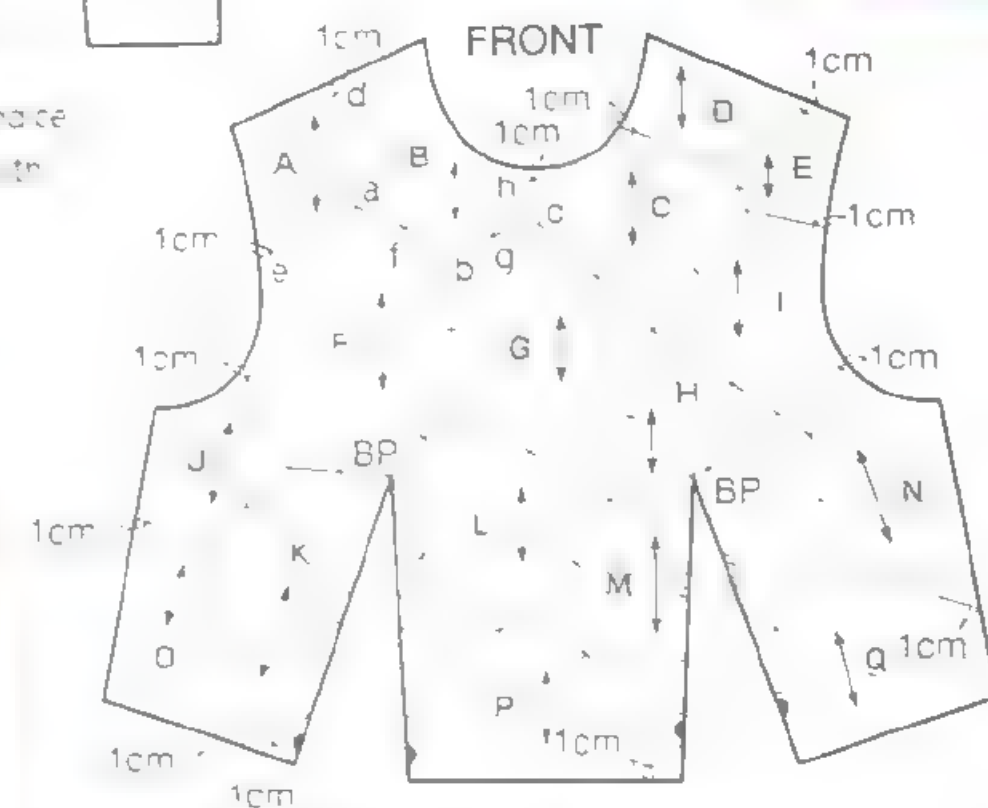


1 Move the darts by closing the existing darts and opening up the pattern from a pivot on the bust point BP.

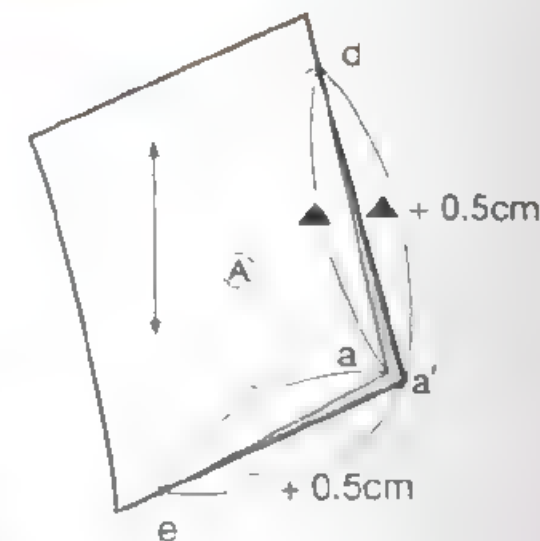
2 The front bodice pattern piece with darts closed.



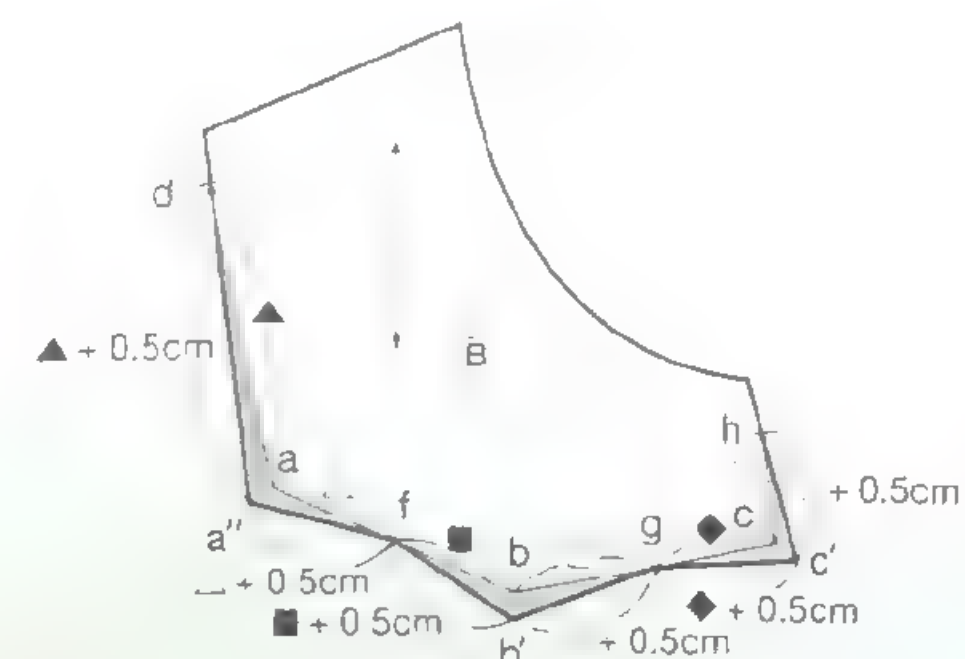
3 Assemble the sloper block and draw the polygonal lines. Add the V-shaped design lines going through the BP.



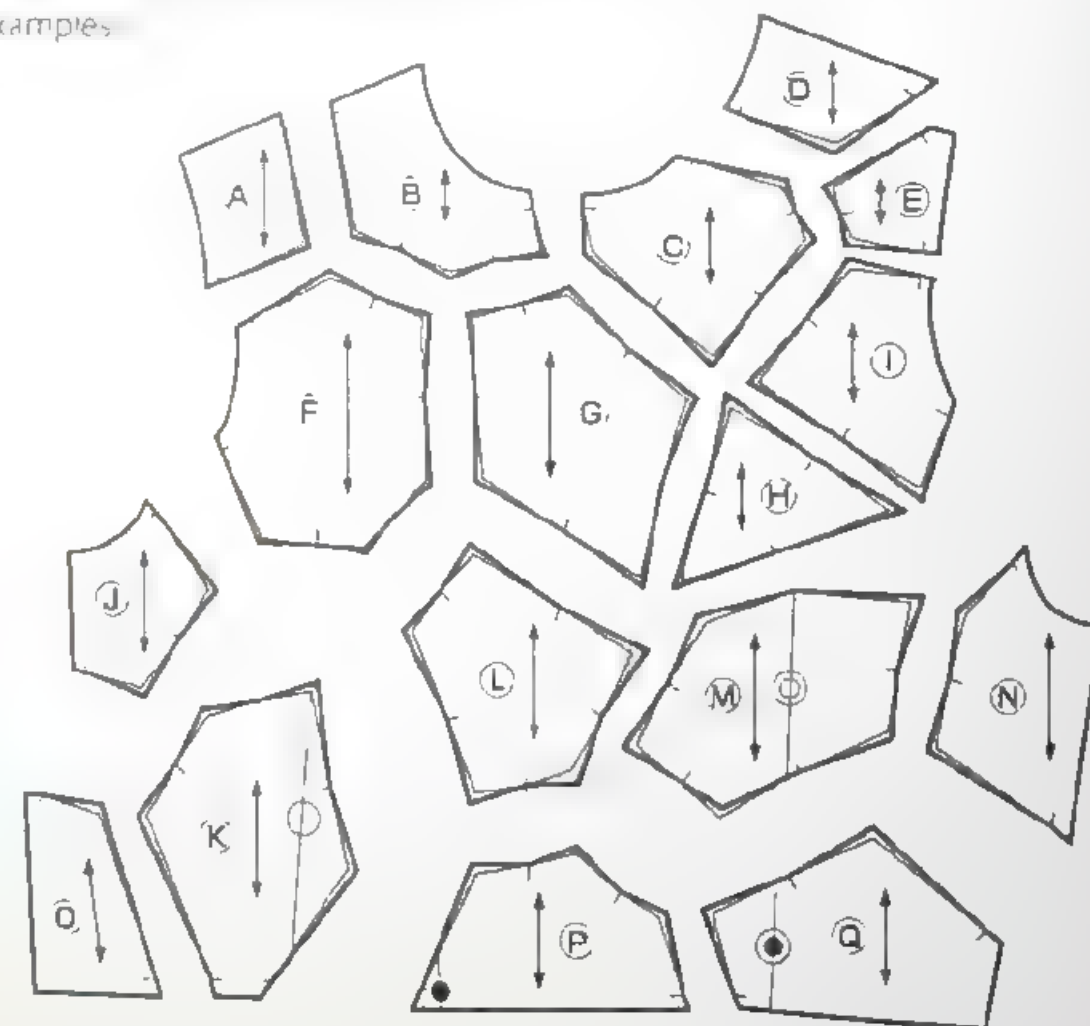
4 Lay the sloper block flat and copy the design lines. Mark the polygon A to Q. Add markings at the mid-points between neighbouring lines. For design lines that come into contact with the outline of the sloper block, draw the markings 1cm (the seam allowance) away. Mark a, b, c, d, e, f, g, and h (the drawing above includes only the markings for polygons A and B, which we are using for our examples).



5 Manipulate A. Make the a to d measurement \triangle and the a to e measurement \square . Use a pair of compasses to mark distances ($\triangle + 0.5\text{cm}$) from d and ($\square + 0.5\text{cm}$) from e, and call their intersection a'. Connect d, a', and e.



6 Manipulate B. Make the a to d measurement \triangle , and the other measurements \square , \diamond , and \circ in the same way. As in 5, use a pair of compasses to determine a'', b', and c'. Connect d, a'', f, b', g, c', and h.

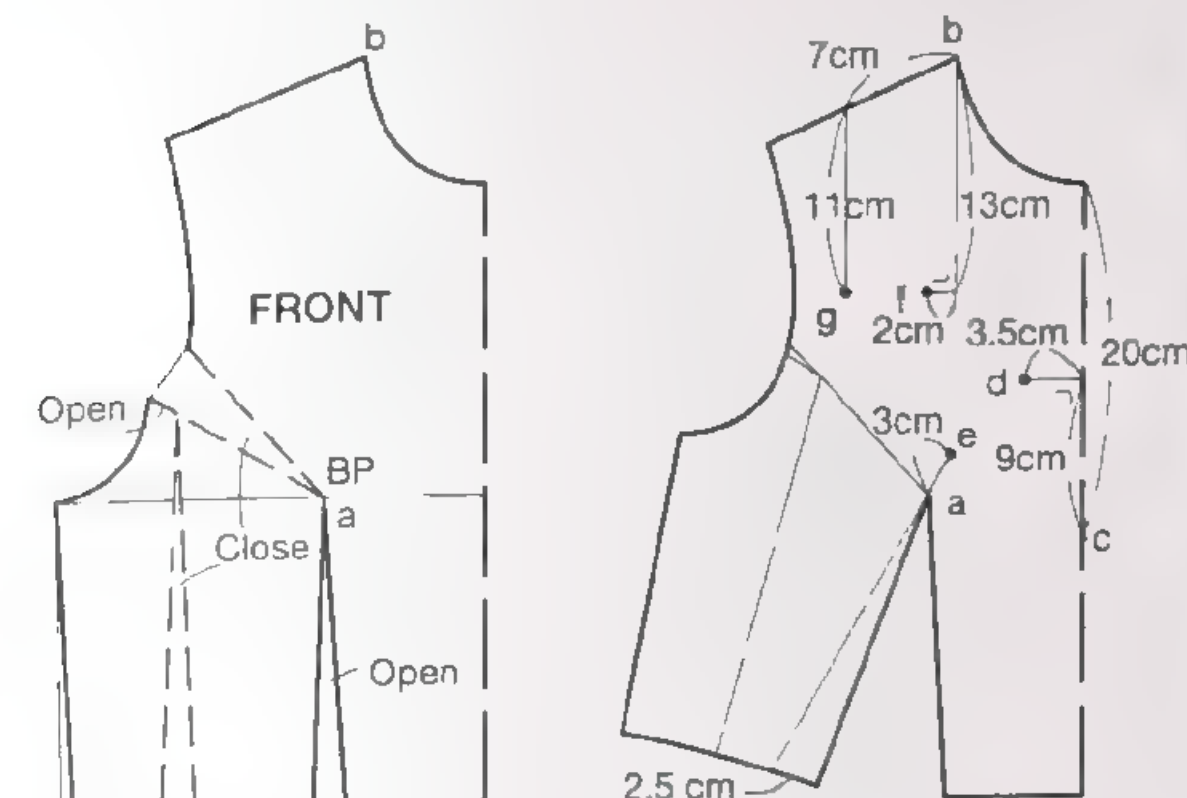


7 Manipulate all the sections in the same way.



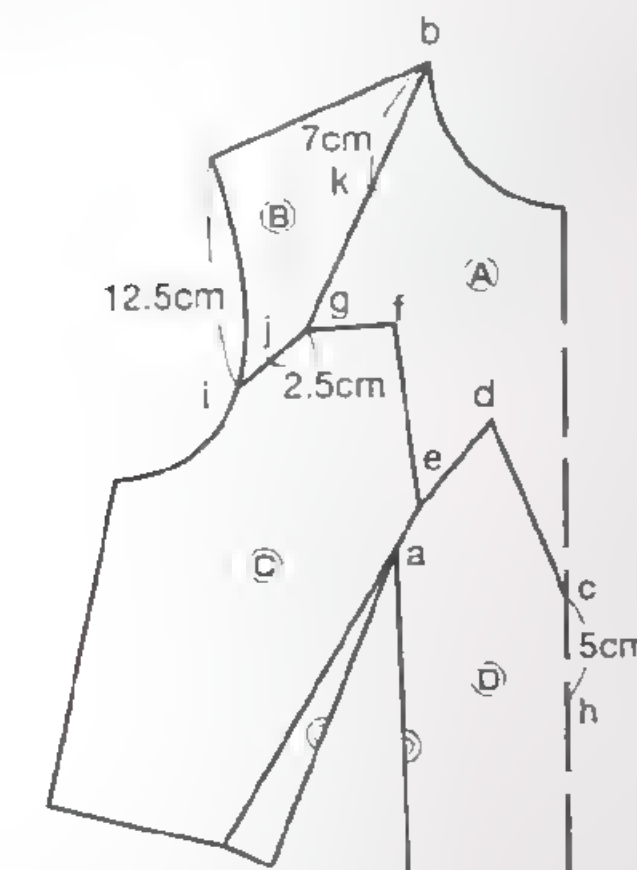
Sculpting a cliff face

Increasing the allowance in the serrated design lines and the protrusion of the pattern gives this sheer-cliff look.

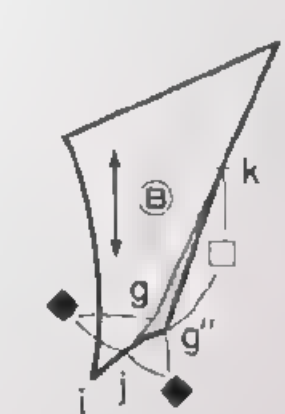


1 Move the darts as explained opposite. Mark a and b.

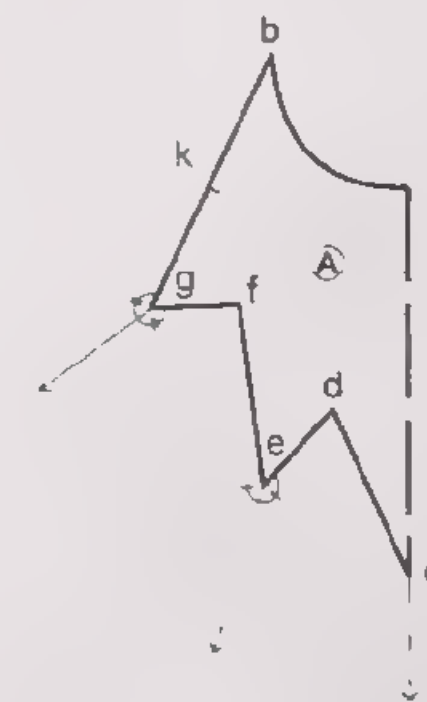
2 Mark the protrusion points c, d, e, f, and g.



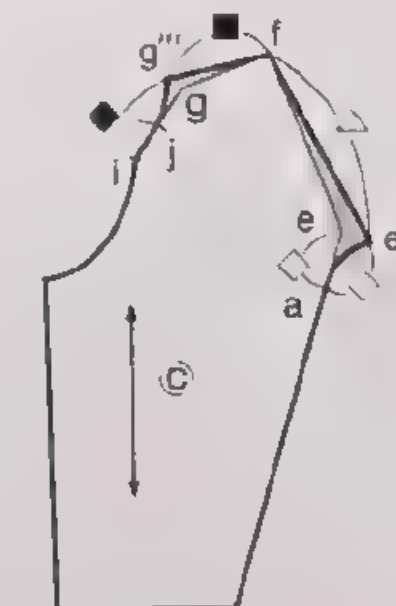
3 Connect c, d, e, f, g, and b. Draw i on the armhole. Connect i and g. Draw A, B, C, and D. Mark h, j, and k. Points h, a, j, and k will be the positions from which the protrusion starts.



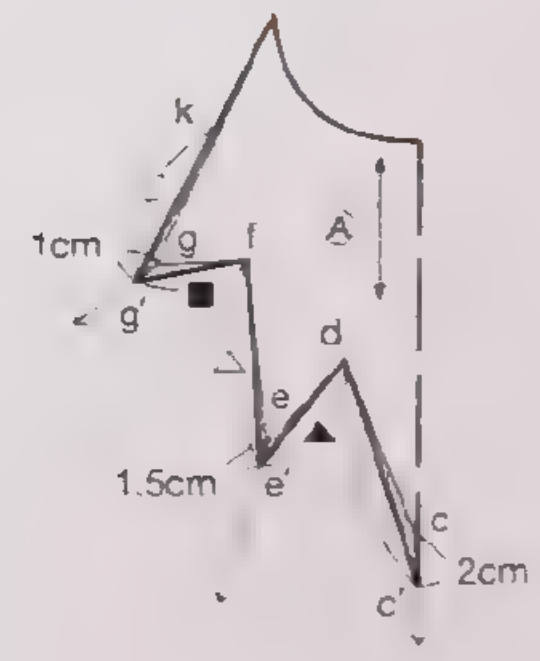
6 Manipulate B. Make the j to g measurement \diamond . Use a pair of compasses to mark distances \diamond from j and \square from k. Call their intersection g''. Connect k, g'', and j.



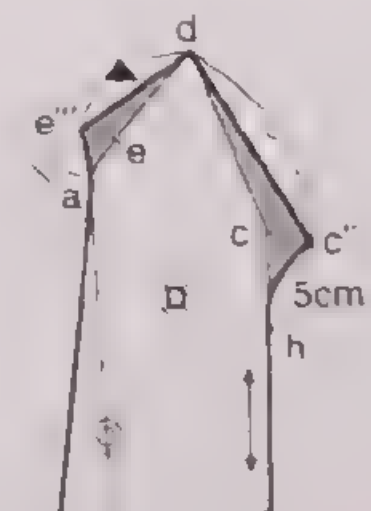
4 Manipulate A. Draw an extension line from c along the centre front line. Draw an extension line at the same angle from e. Draw an extension line from g in the same way.



7 Manipulate C. Make the a to e measurement \diamond . Use a pair of compasses to determine e'' and g''' in the same way. Connect a, e'', f, g'', and j.



5 On the extension lines from c, e, and g, draw c', e', and g', and connect c' and d, e' and f, and g' and k. Make the c to d measurement \square , and the other measurements \triangle , \diamond , \square , and \square .



8 Manipulate D. Use a pair of compasses to determine c'' and e''' in the same way. Connect h, c'', d, e'', and a. Sew together A, B, C, and D.

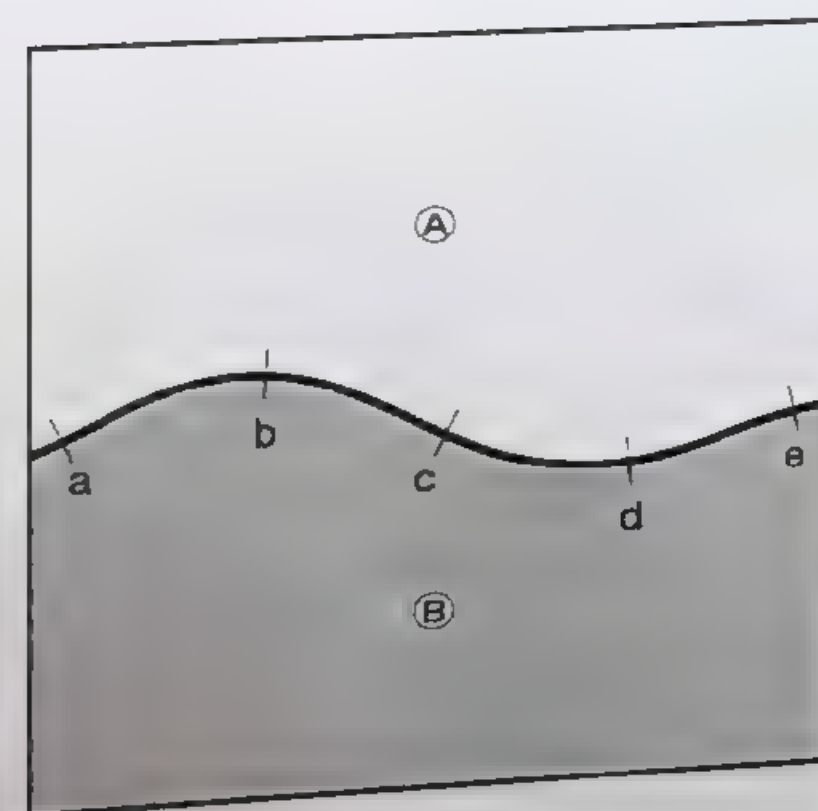


Making waves

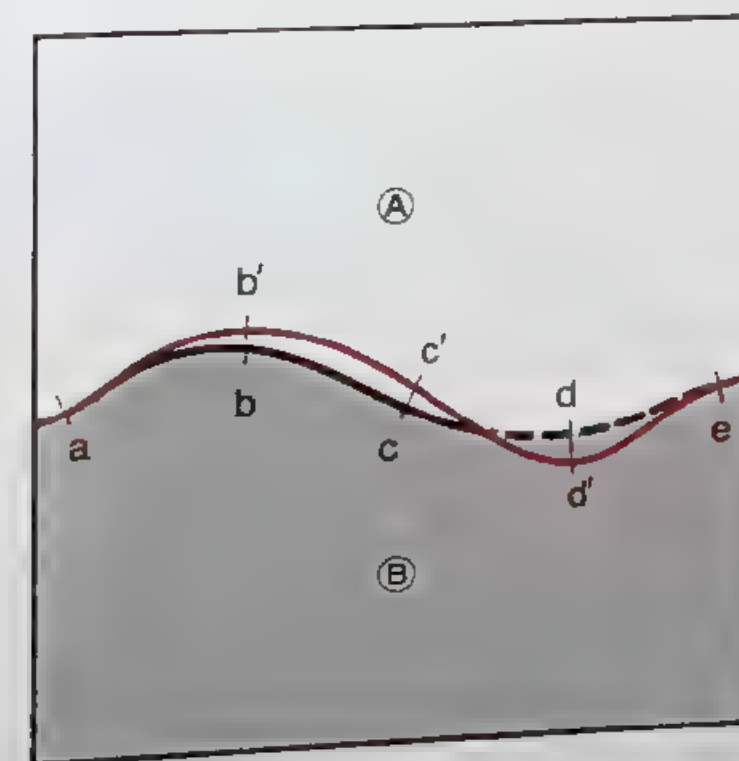
Gentle ripples, raging storm waves, the breakers that surfers wait for... All kinds of waves for us to try and express in pattern form.

Overhanging wave: Basic technique

I've drawn two design lines in large curves, arranged so one of them will overhang. I've then portrayed the wave by incorporating a gusset between the lines. The wave takes on different shapes depending on the angle you're looking from.

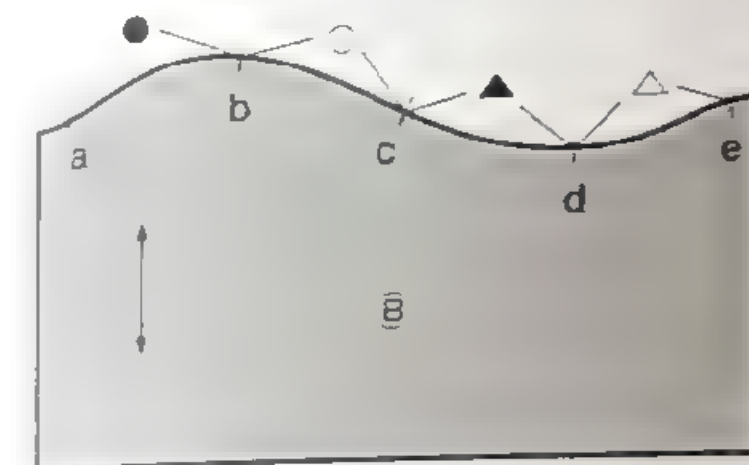
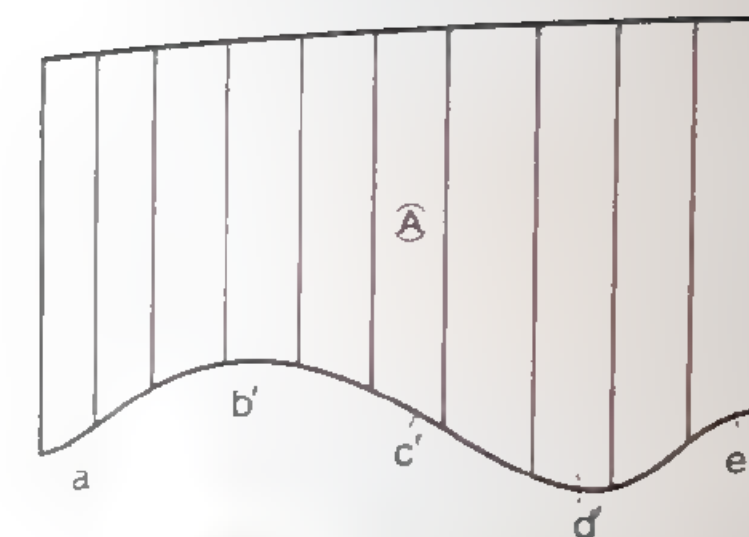
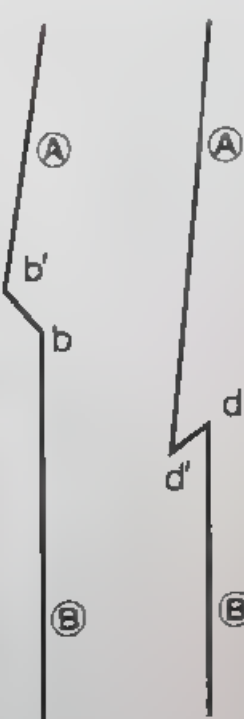


1 Draw a curve to divide the pattern into wave A and wave B. Mark a, b, c, d, and e, and then draw marking lines at right angles to the curve at these points. The wave will be adjusted so that A hangs over B at position d

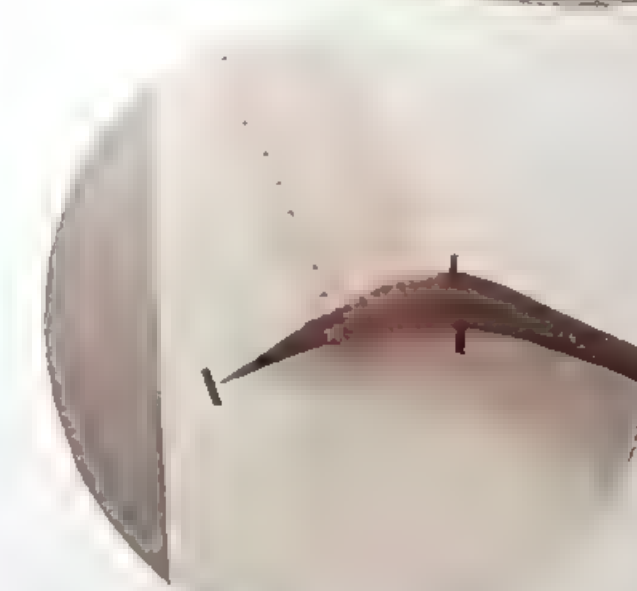


2 A overhangs B at position d. Measure the amount of overhang on the marking line at d and call that point d'. The amount of overhang will increase as the distance from d to d' gets bigger. Draw the panel A wave smoothly and continuously from point a through d' to e (red line). Mark the intersection of wave A with the marking lines b and c as points b' and c'. The broken line section on B will be underneath A.

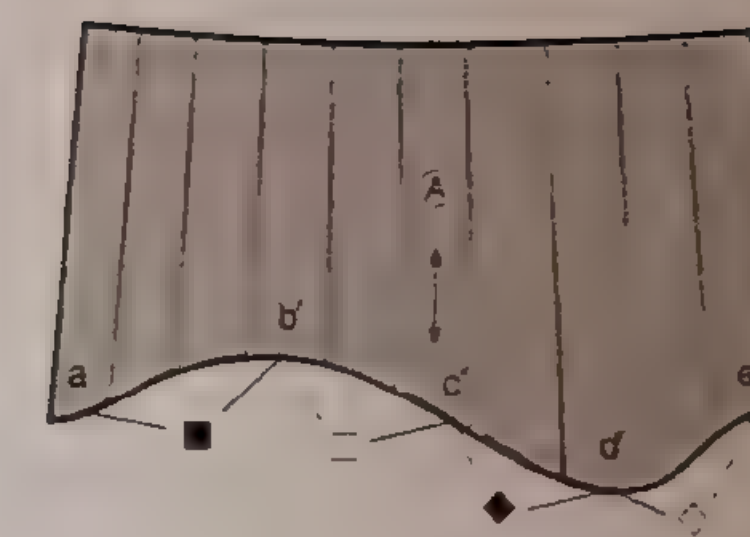
Cross-section



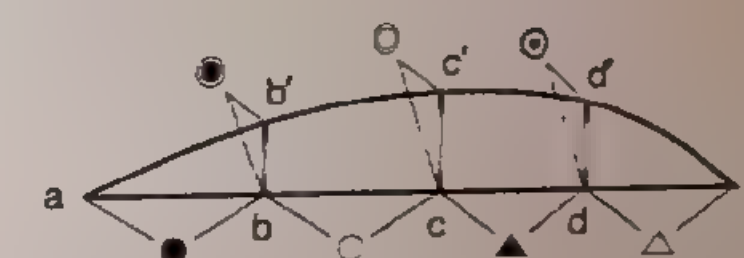
3 Draw the cutting and opening out lines on A. The more you cut and open out, the higher the wave. On B, call the a to b measurement ●. Call the other measurements ○, ▲, and △.



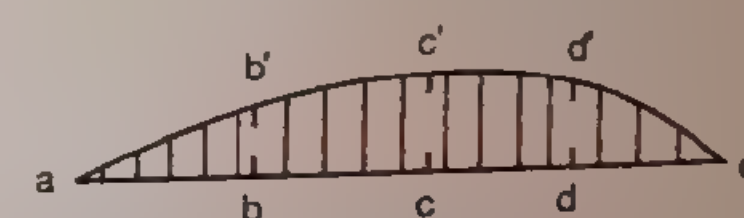
5 Make the pattern with paper. The gusset will go in the area we have opened from a to e. To decide the width of the gusset, measure the distance between the opposing marking lines on A and B.



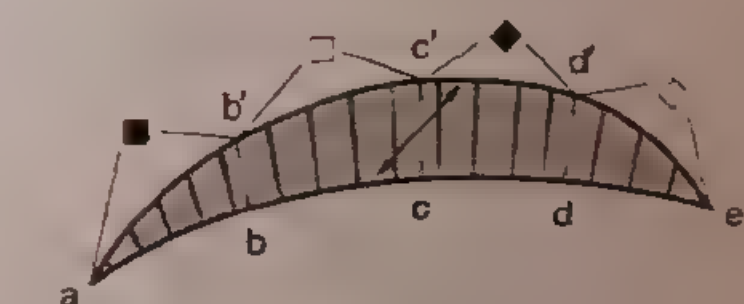
4 Cut and open out A. Call the a to b' measurement ■. Make the other measurements □, ◆, and ◇.



6 Draw the pattern for the gusset. Call the measurements between the markings ●, ○, and △. Draw a horizontal line from a. Measure a distance ● from a and mark b, and then measure the distances ○, ▲, △ and mark c, d, and e in the same way. On the line directly up from b, measure the distance ● and mark b', and then mark c' and d' in the same way. Draw a smooth and continuous curve connecting a, b', c', d', and e.



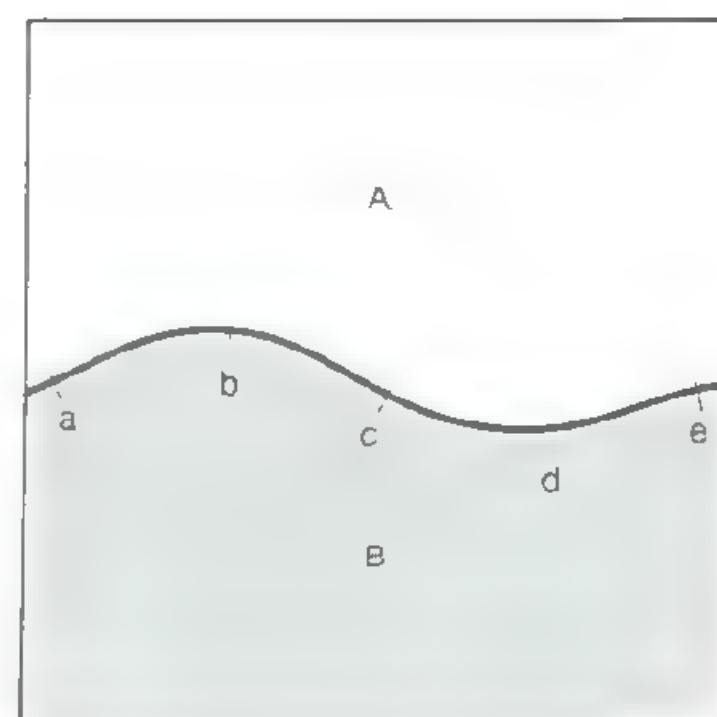
7 Draw the cutting and opening out lines.



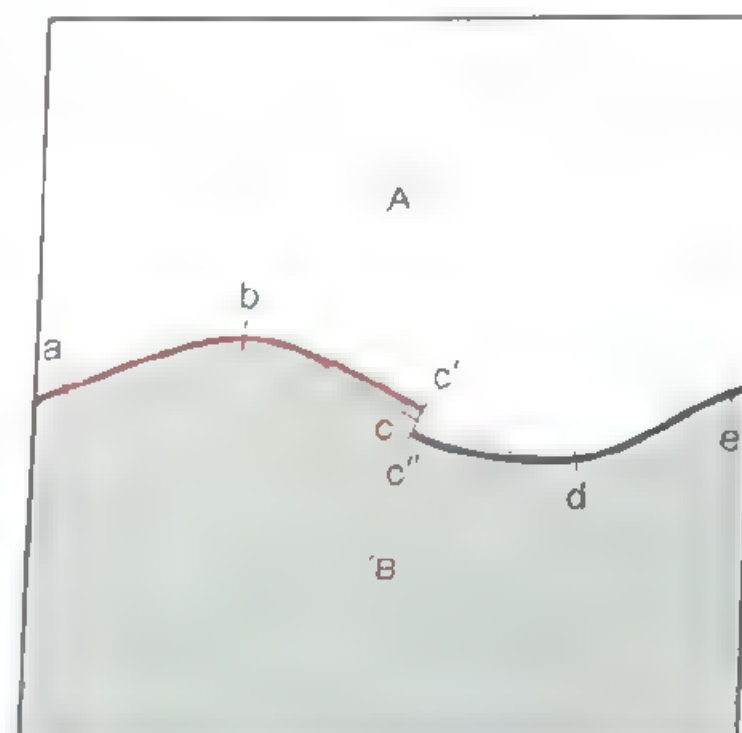
8 Cut and open out until the distance from a to b' is that of measurement ■ in 4. Make the other measurements □, ◆, and ◇ in the same way. Draw the finishing lines smoothly and continuously, passing the grain through the bias.

Violent interlocking waves: Basic technique

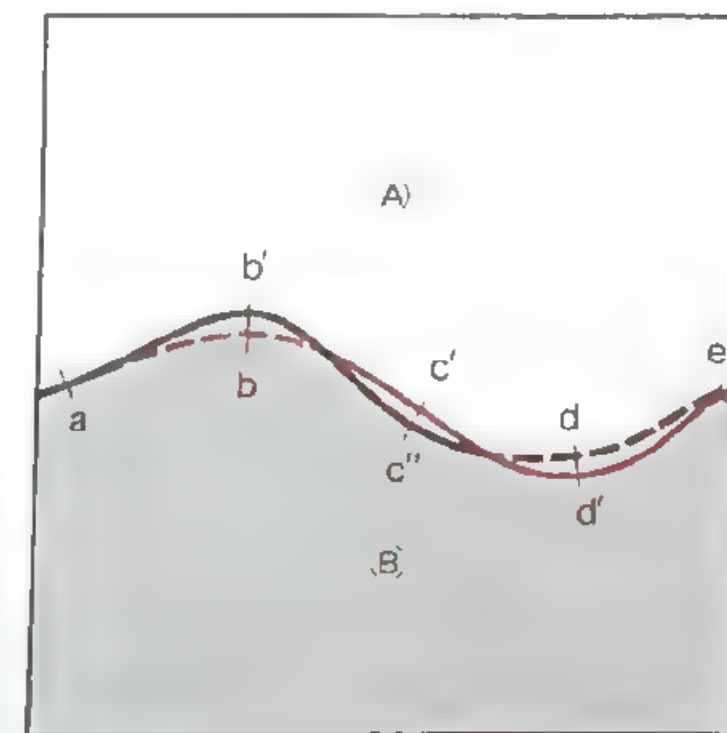
I've drawn two design lines in large curves to overhang each other. To express the violence of the wave, I've also changed the direction of the gusset so that it gets twisted.



1 Draw a curve to divide the pattern into wave A and wave B. Mark a, b, c, d, and e, and then draw marking lines at right angles to the curve. The waves will be adjusted so that B hangs over A at position b, there is a twist at position c, and A hangs over B at position d.

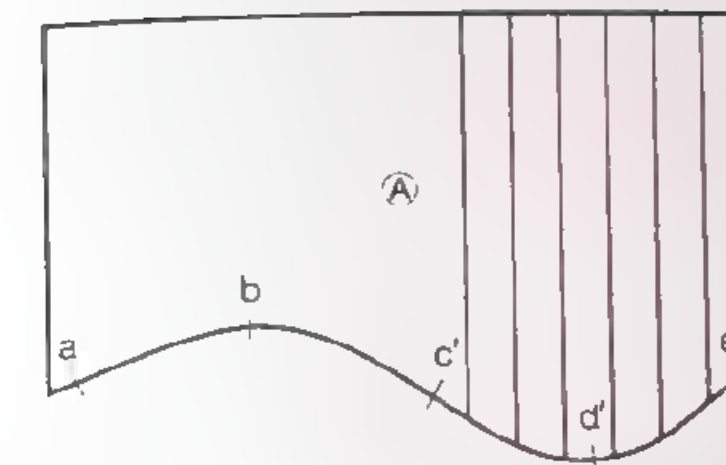
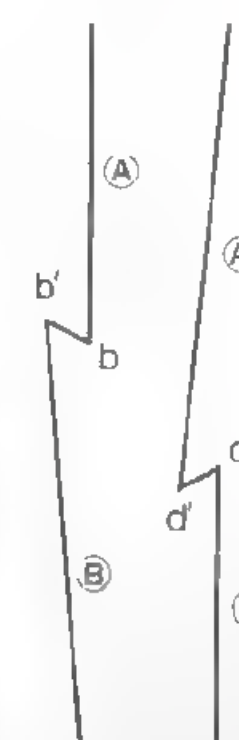


2 Measure the width of the twisted section on the marking line at c and call those points c' and c''. Draw the panel A wave from a to b to c' (red line) and the panel B wave from c' to d to e.

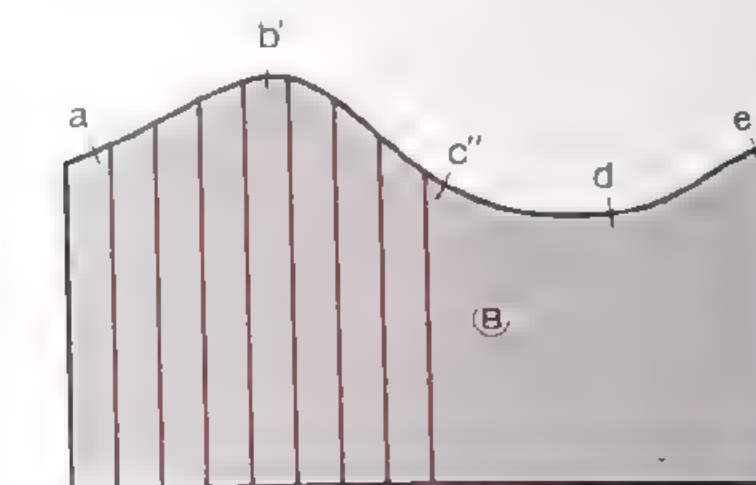


3 For the panel B wave, measure the overhanging section on the marking line at b and call that point b'. Draw a, b', and c' smoothly and continuously. For wave A, measure the distance by which the fabric overhangs on the marking line at d and call that point d'. Draw c', d', and e smoothly and continuously (red line). The wave on panel B overhangs at position b, and the wave on panel A at position d. The broken line section will be the section underneath each wave.

Cross-section



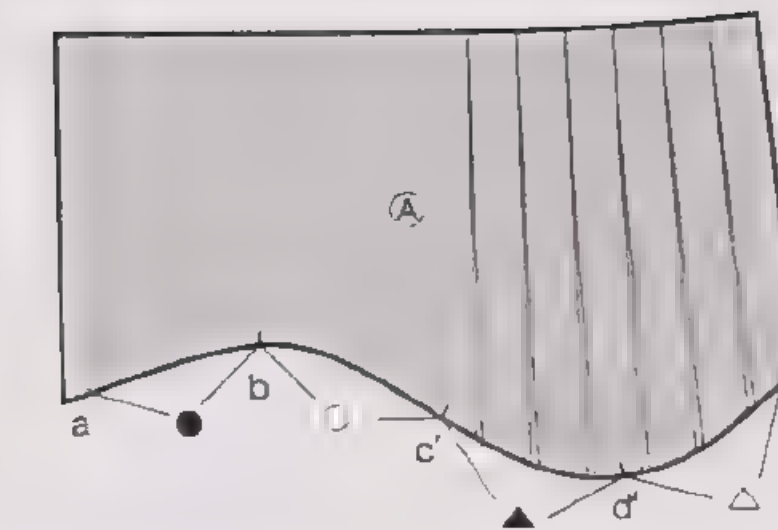
4 Draw the cutting and opening out lines from c' to e. The more you open the fabric out, the higher the wave.



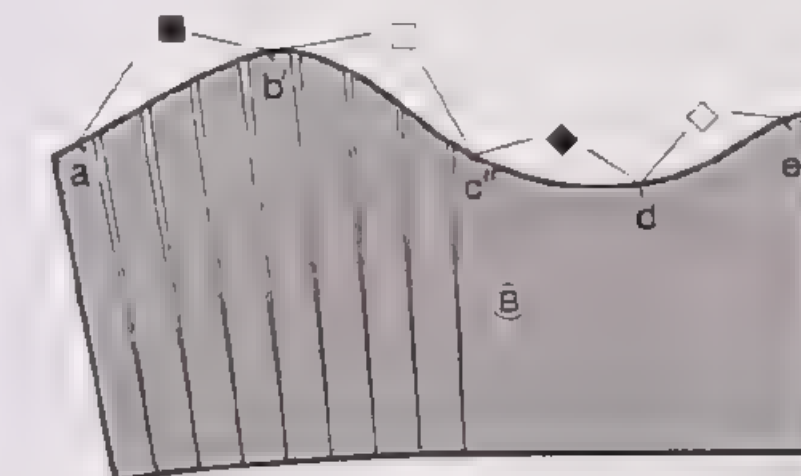
6 Draw the cutting and opening out lines between points a and c'.



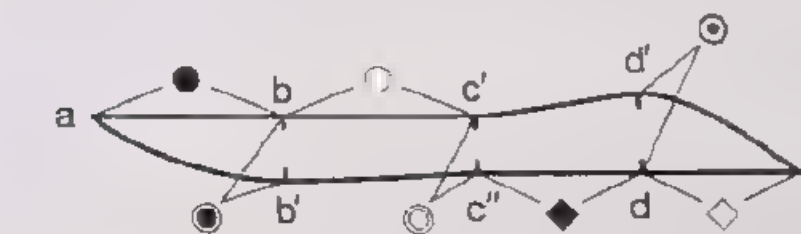
8 Make the pattern with paper. The gusset will go in the area we have opened from a to e. To decide the width of the gusset, measure the distance between the opposing marking lines on A and B.



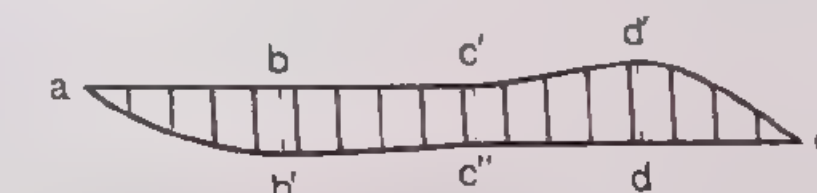
5 Cut and open out by any amount you like. Call the distance from a to b measurement ●. Call the other measurements ○, ▲, and △.



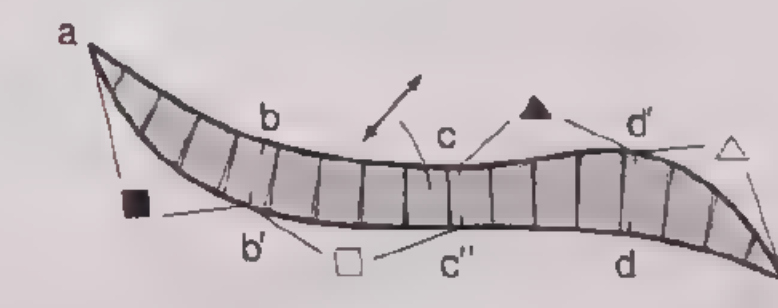
7 Cut and open out. Call the a to b' measurement ■. Make the other measurements □, ◆, and ◇.



9 Draft the pattern for the gusset. Call the measurements between the markings ●, ○, and △. Draw a horizontal line from a, measure the distance ● and mark b, and the distance ○ and mark c'. On the line directly down from c', measure ◆ and mark c''. Draw a horizontal line from c'', measure ◆ and mark d, and then measure ◇ and mark e. On the line directly down from b, measure ● and mark b'. On the line directly up from d, measure △ and mark d'. Connect the points smoothly and continuously.

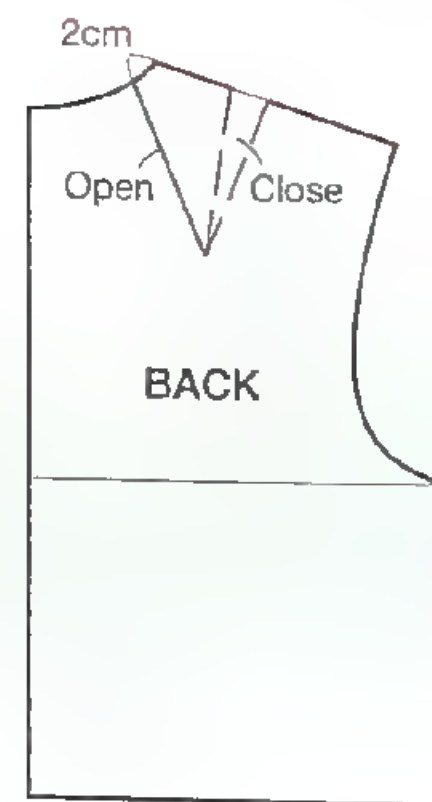


10 Draw the cutting and opening out lines.

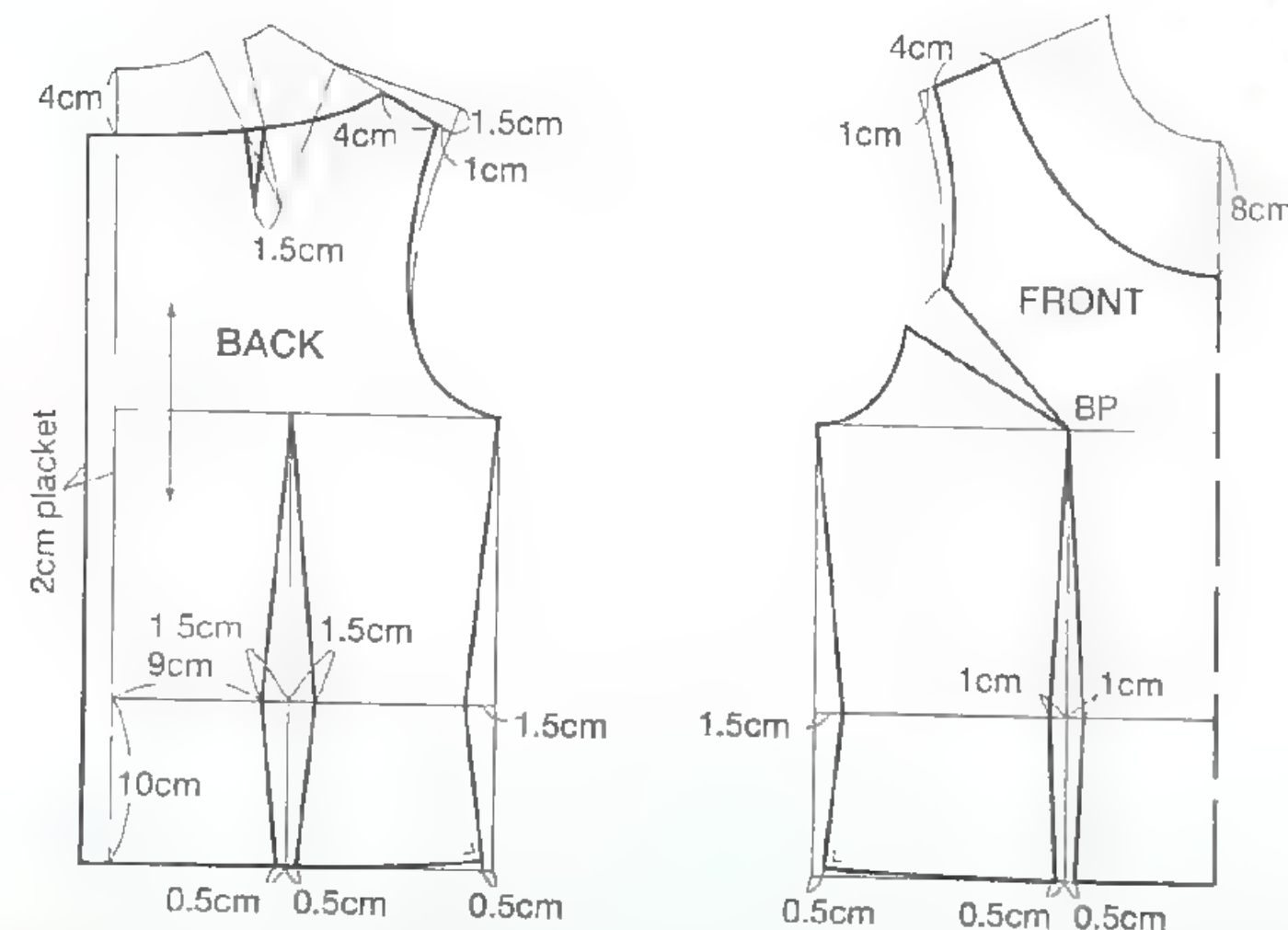


11 Cut and open out until the distance from a to b' is that of measurement ■ in 7. In the same way, cut and open out until the distances from b' to c'', c' to d', and d' to e are □, ▲, and △ respectively. Draw the outline of the gusset smoothly and continuously, passing the grain through the bias.

Blouse with overhanging wave

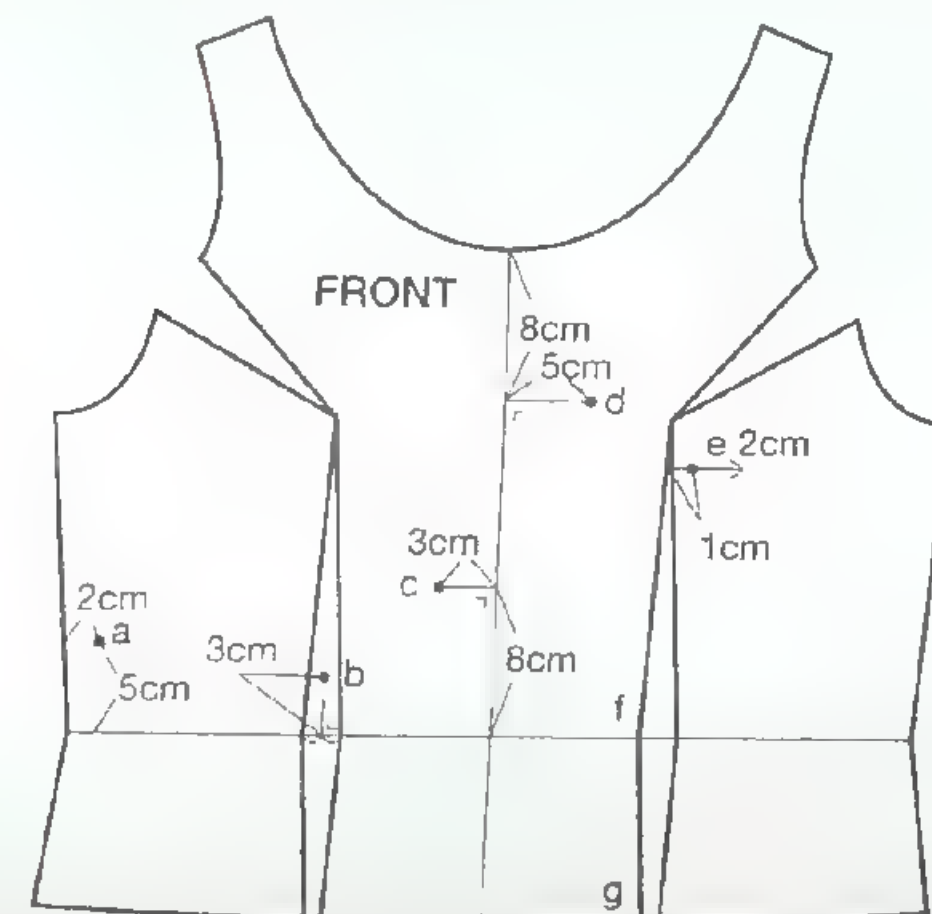


1 Move the shoulder dart to the neckline by closing the existing dart and making a new opening as indicated by the red line.

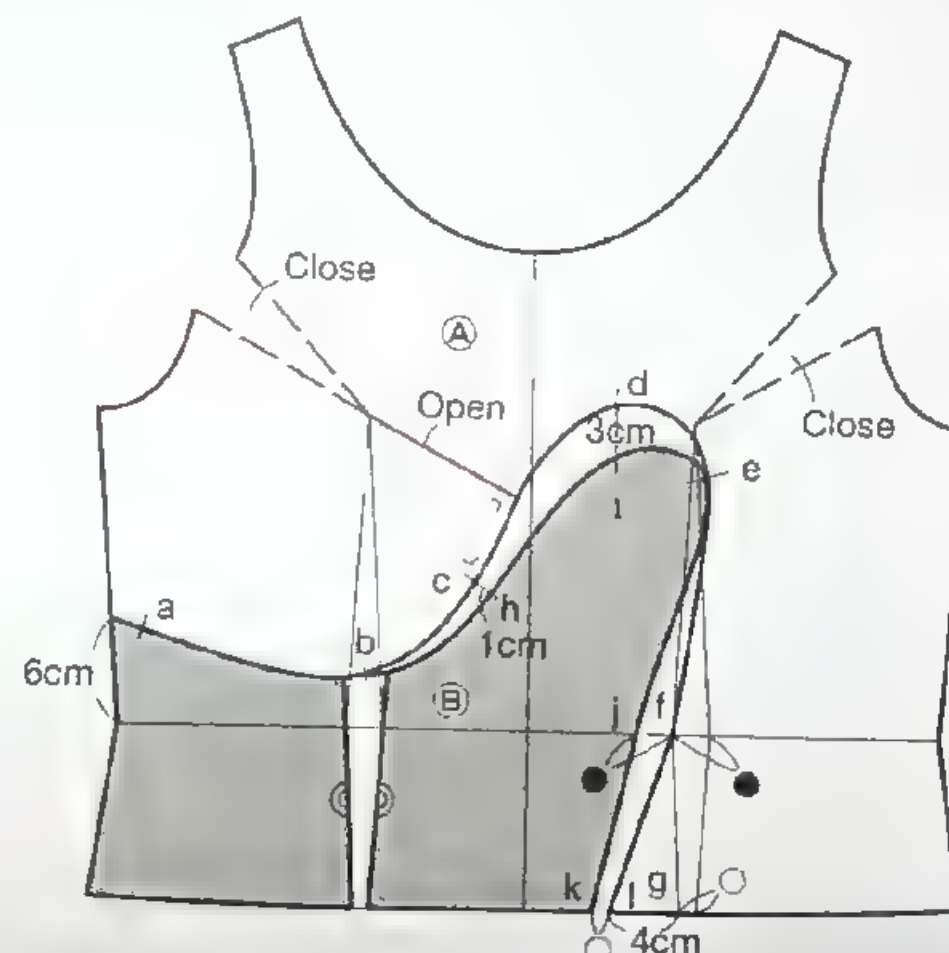


2 Draft the pattern for the back bodice.

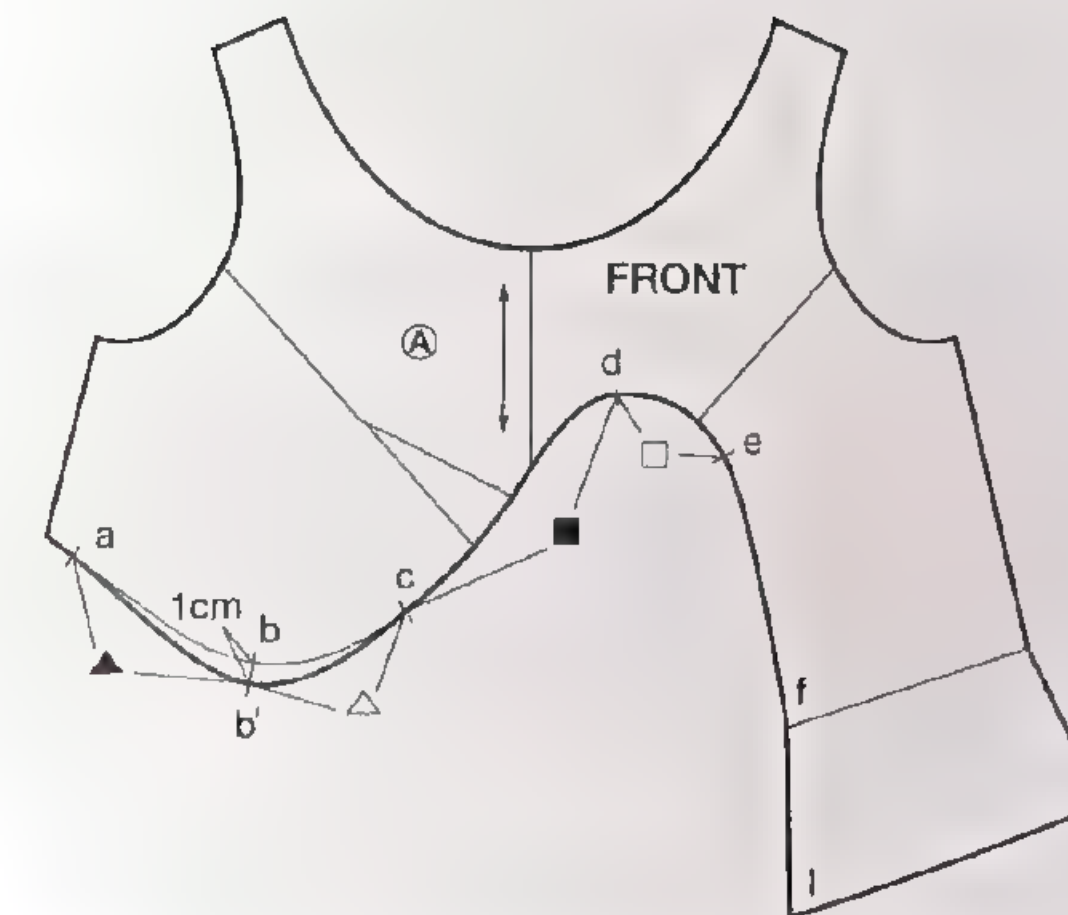
3 Draft the pattern for the front bodice



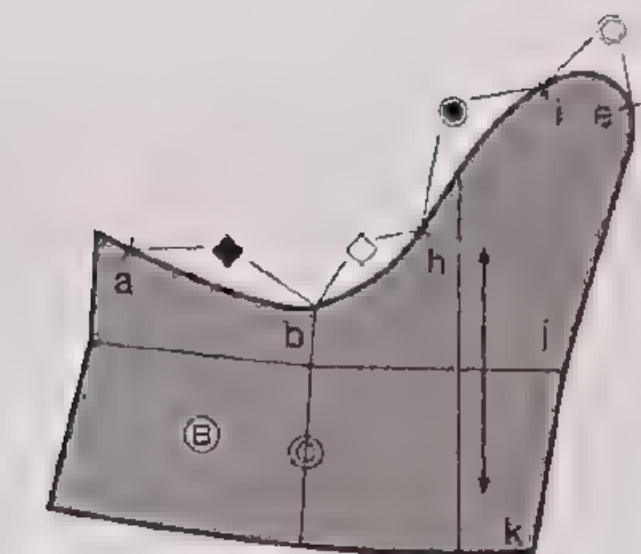
4 Draw a reflection of 3 to draft the pattern for the entire front bodice. Mark a, b, c, d, e, f, and g.



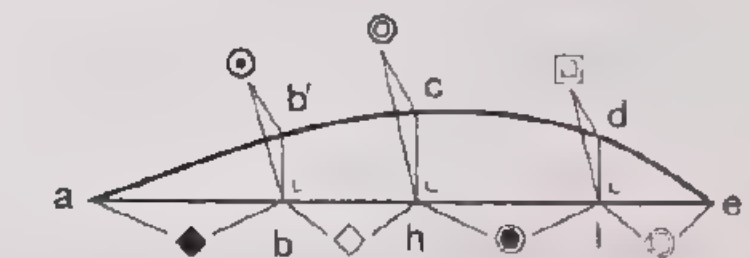
5 Mark h, i, j, k, and l. Draw smoothly and continuously from the right-hand side through a, b, c, d, e, and f. Draw smoothly and continuously from b through h, i, e, j, and k. Divide into panels A and B. Points a and e will be the gusset ends.



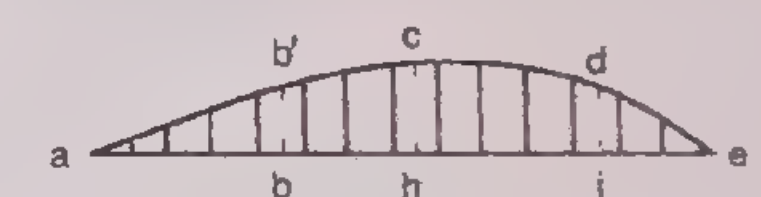
6 The panel A wave overhangs, and b comes out as far as b'. The curve of panel A passes through a, b', c, d, and e. Call the distance from a to b' measurement Δ. Call the other measurements Δ, ■, and □.



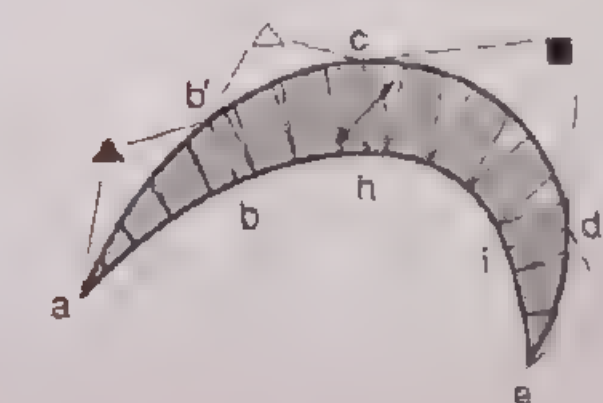
7 Close the dart. Call the distance from a to b measurement ◆. Call the other measurements ◇, ●, and ○.



8 Draft the pattern for the gusset. Call the measurements between the opposing markings measurements ◎, ⊙, and ⊠. Draw a horizontal line from a, measure ◆, and mark point b. Mark points h, i, and e in the same way. On the line directly up from b, measure ⊙ and mark point b'. Mark c and d in the same way. Draw a smooth and continuous curve connecting a, b', c, d, and e.



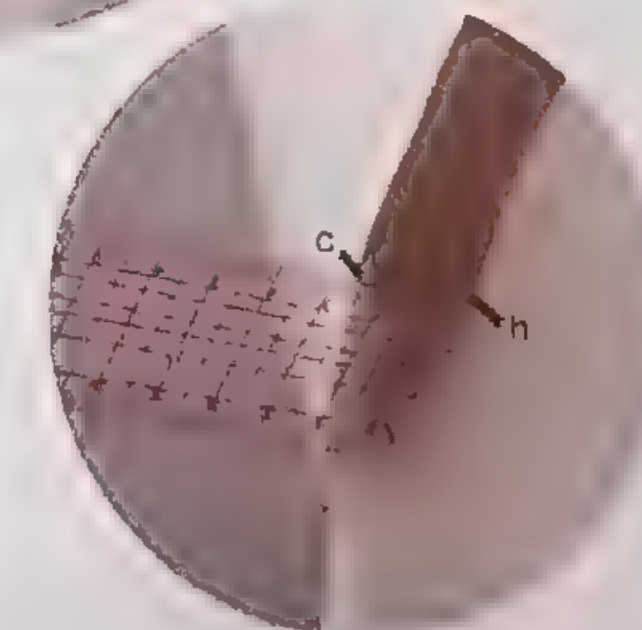
10 Draw the cutting and opening lines.



11 Cut and open out until the distance from a to b' is that of measurement Δ in 6. Cut and open out from b' to c, c to d, and d to e until they measure Δ, ■, and □ in the same way. Smoothly and continuously draw the hushing lines and mark the grain line through the bias.

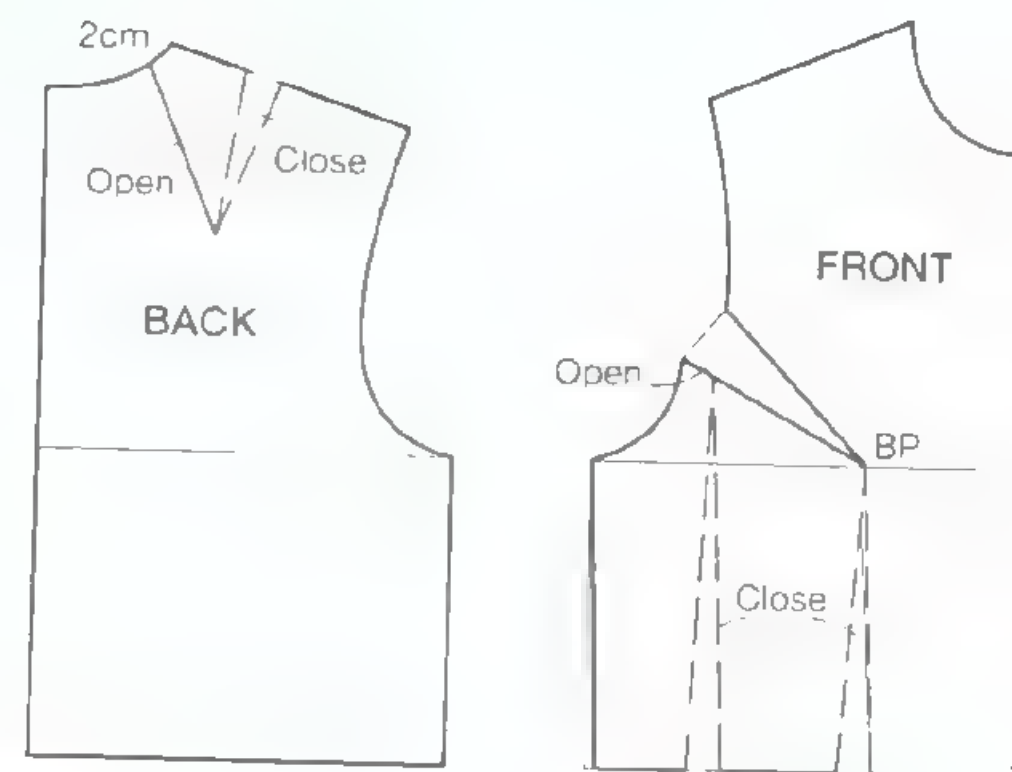


12 Make the pattern in paper and place it on the dress form. The gusset will go in the area we have opened from a to e (point a cannot be seen on the photograph). To decide the width of the gusset, measure the distance between the opposing marking lines on A and B, for example between c and h.

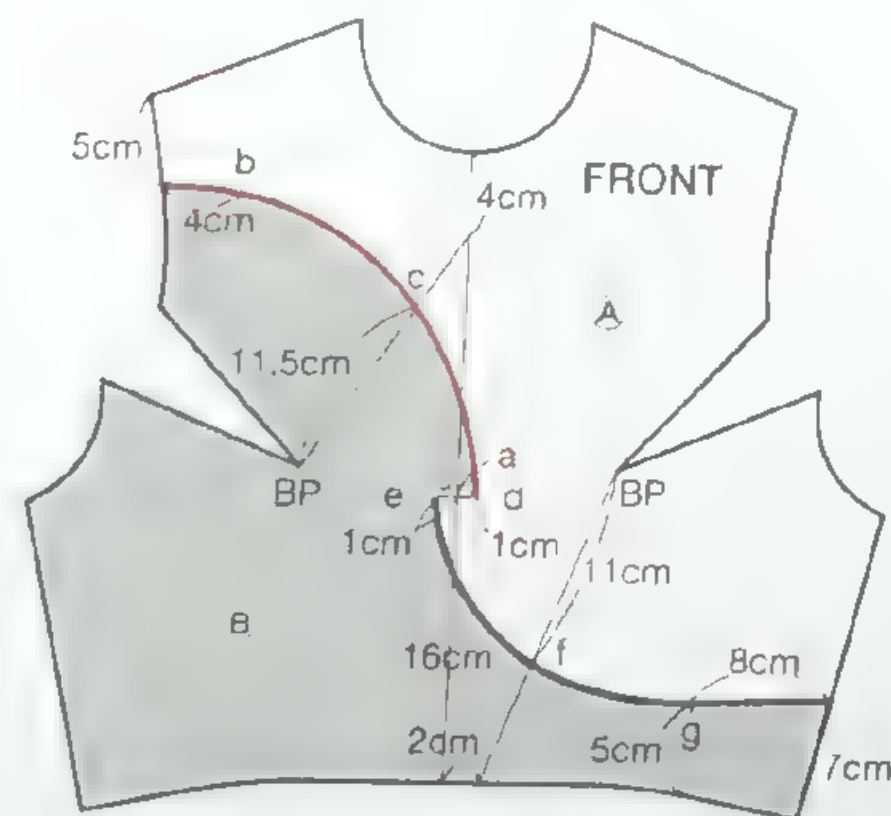


Violent interlocking waves A

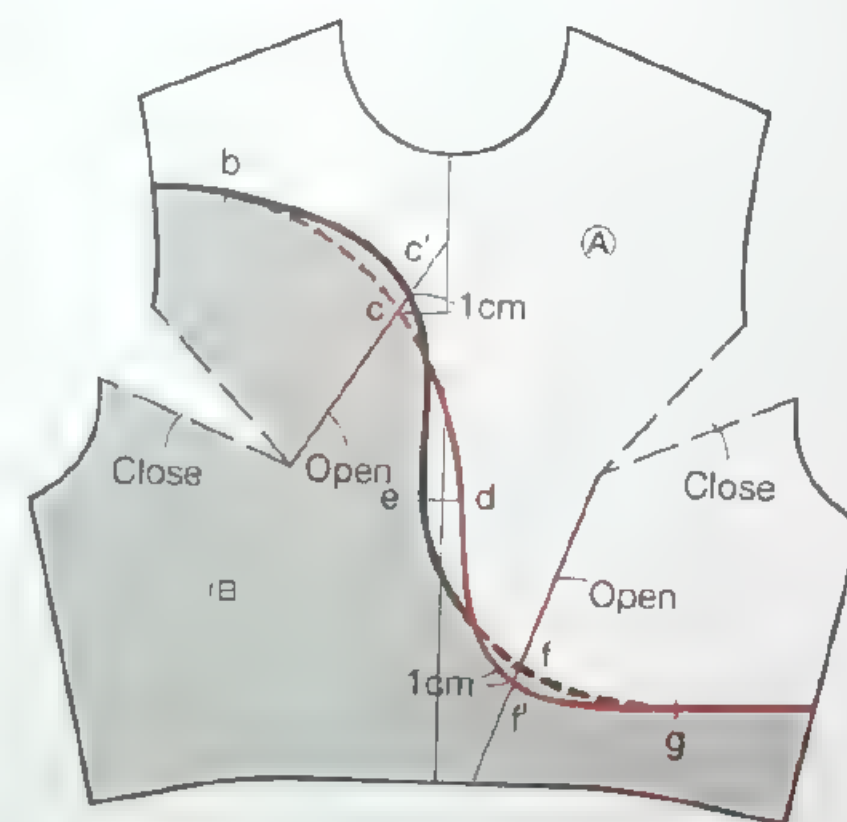
These waves, which interlock around the centre of the front bodice, are made more violent and dynamic by closing the armhole darts and opening them out in opposite directions.



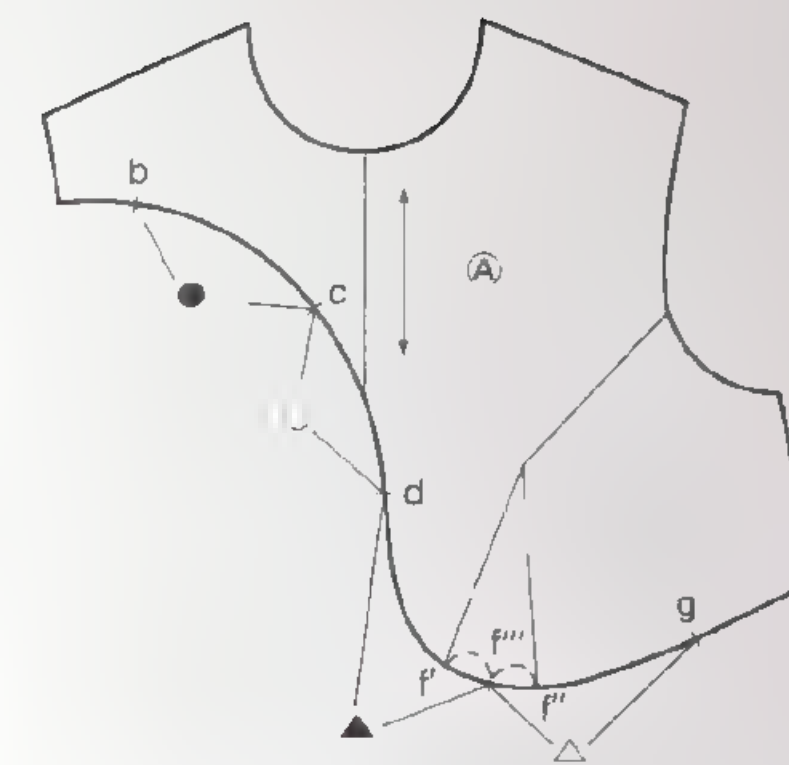
1 Move the darts as explained on pages 24 and 30



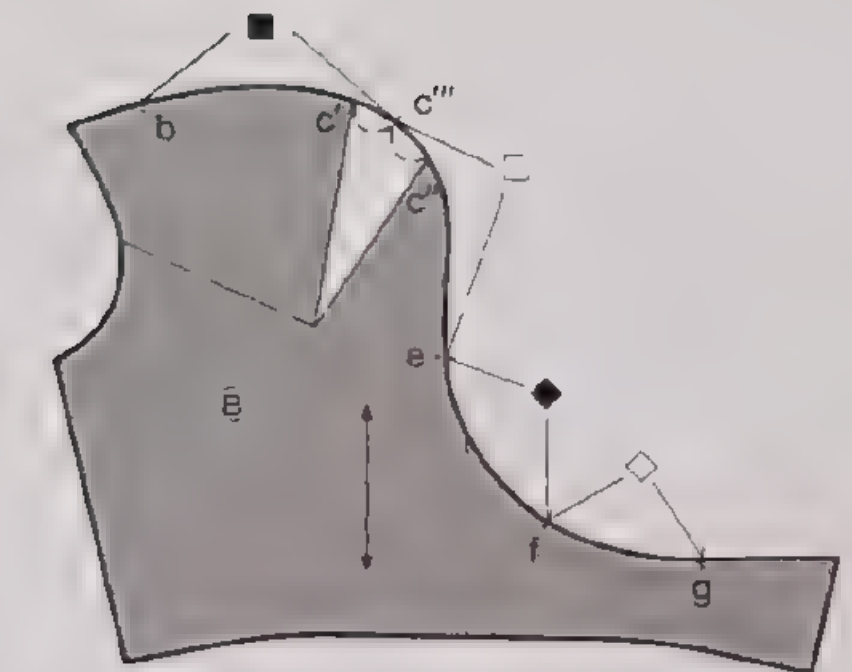
2 Draw a reflection of 1 to draft the pattern for the entire front bodice. Mark a as the point 16cm from the hem on the centre front line. Mark points e and d 1cm horizontally either side of a. Mark b, c, f, and g. Draw the wave on panel A smoothly and continuously from the right armhole through b, c, and d (red line). Draw the wave on panel B smoothly and continuously from e through f and g to the left side.



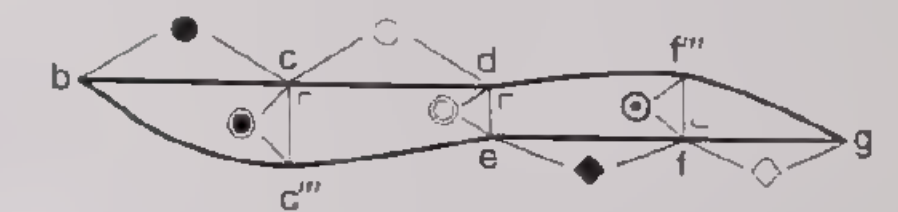
3 Divide into panels A and B. Measure the overhanging section at c and f and mark points c' and f'. On the panel B wave, draw a smooth and continuous line from b to c' and e. On the panel A wave, draw a smooth and continuous line from d to f' and g (red line). The broken line section will be the section underneath each wave.



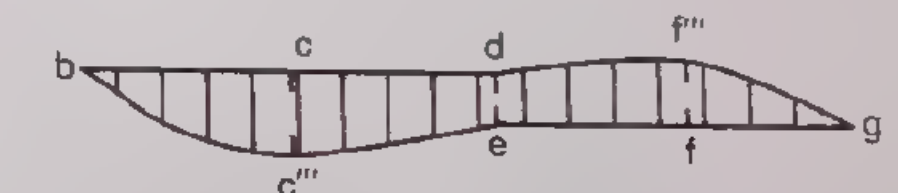
4 On panel A, close the armhole dart and open up the pattern from a pivot point at the tip of the dart. Mark f'. Mark f to f' smoothly and continuously, and then divide into two equal sections and mark f''. Call the b to c measurement ●. Call the other measurements ○, ▲, and △.



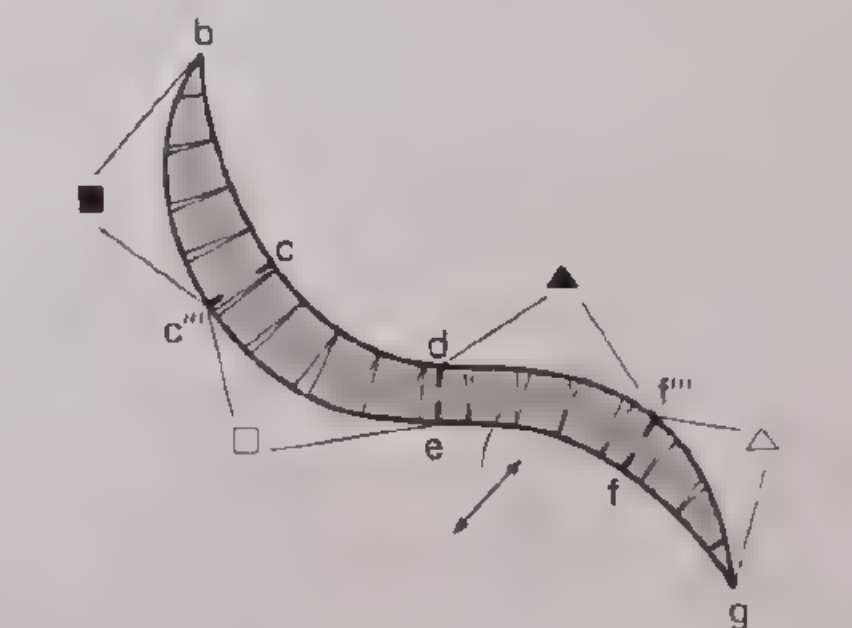
5 On panel B, close the armhole dart and open up the pattern from a pivot point at the tip of the dart. Mark c''. Mark c to c'' smoothly and continuously, and then divide the line into two equal sections and mark c'''. Call the b to c'' measurement ■. Call the other distances □, ◆, and ◇.



7 Draft the pattern for the gusset. Call the measurements between the markings ●, ○, and ◇. Draw a horizontal line from b. Measure the distance ● and mark point c, and the distance ○ and mark point d. On the line directly down from d, measure ◇ and mark e. Draw a horizontal line from e. Measure ◆ and mark f, and then measure ◇ and mark g. On the line directly down from c, measure the distance ● and mark c''. On the line directly up from f, measure ◇ and mark f''. Connect the points smoothly and continuously.



8 Draw the cutting and opening out lines.



9 Cut and open out until the distance from b to c''' is that of measurement ■ in 5. In the same way, cut and open out until the distances from c''' to e, d to f'', and f'' to g are □, ▲, and △, and then mark the grain line through the bias.



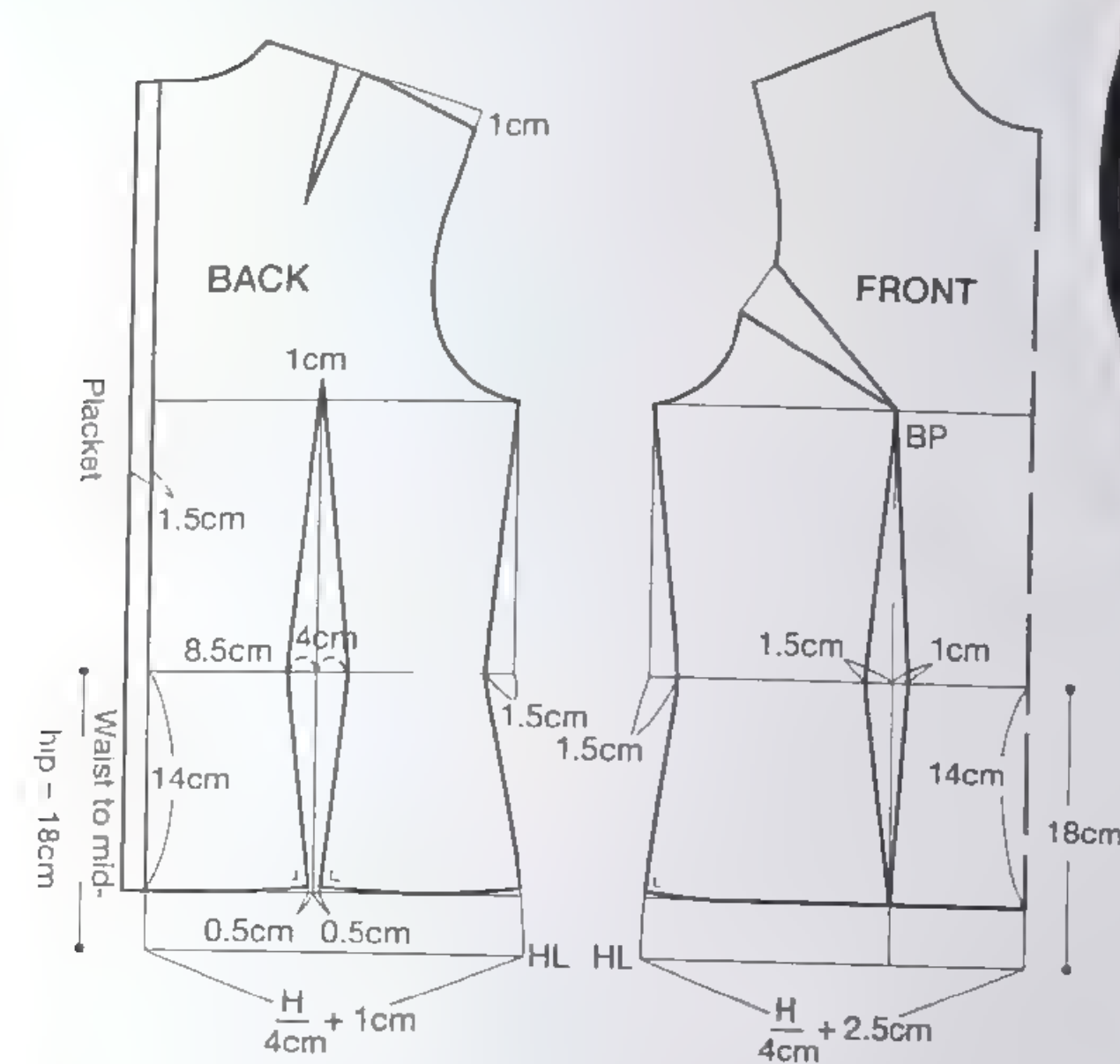
6 Make the pattern in paper and place it on the dress form. The gusset will go in the area we have opened from b to g. To decide the width of the gusset, measure the distance between the opposing marking lines on A and B.

Making waves

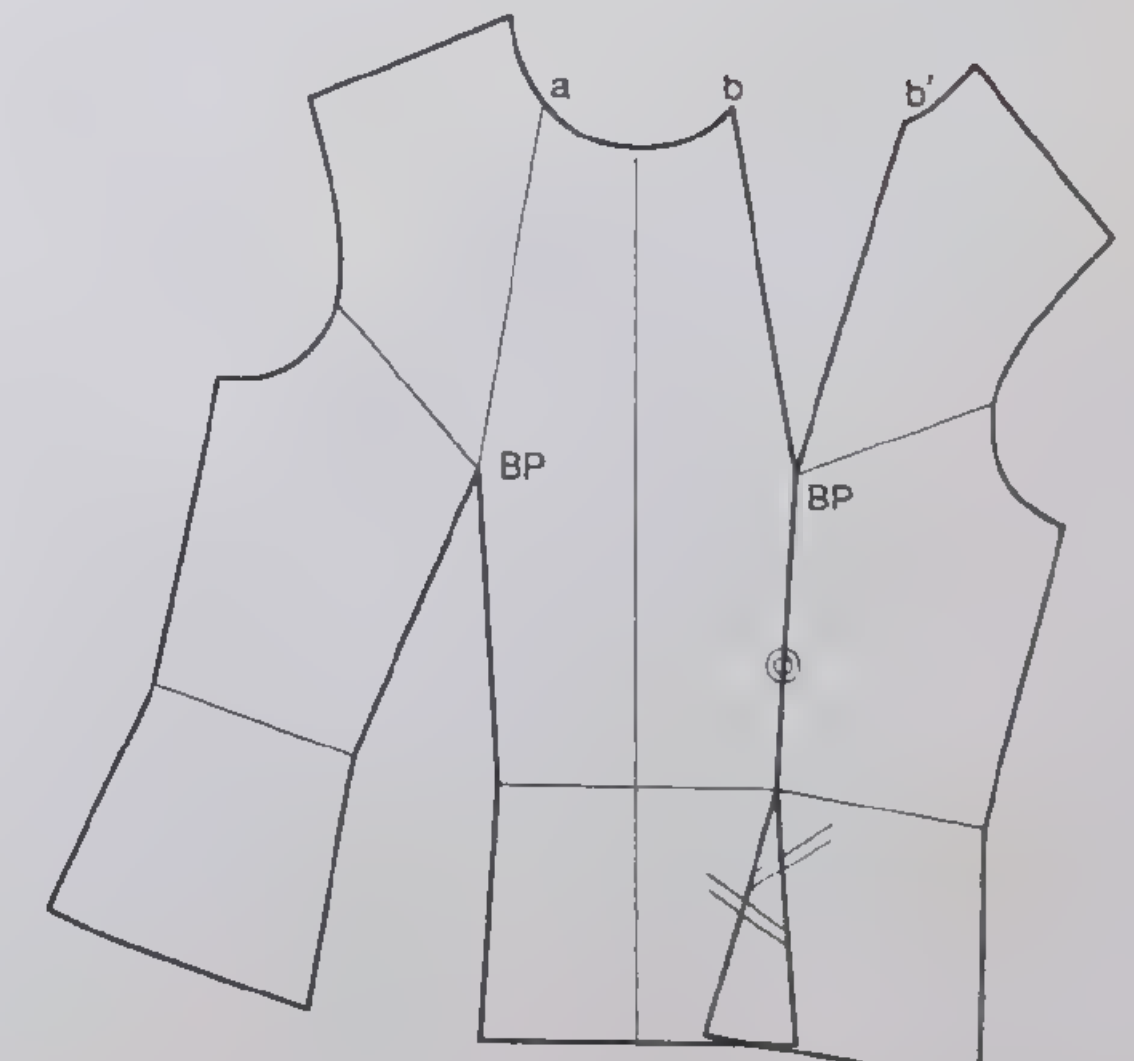
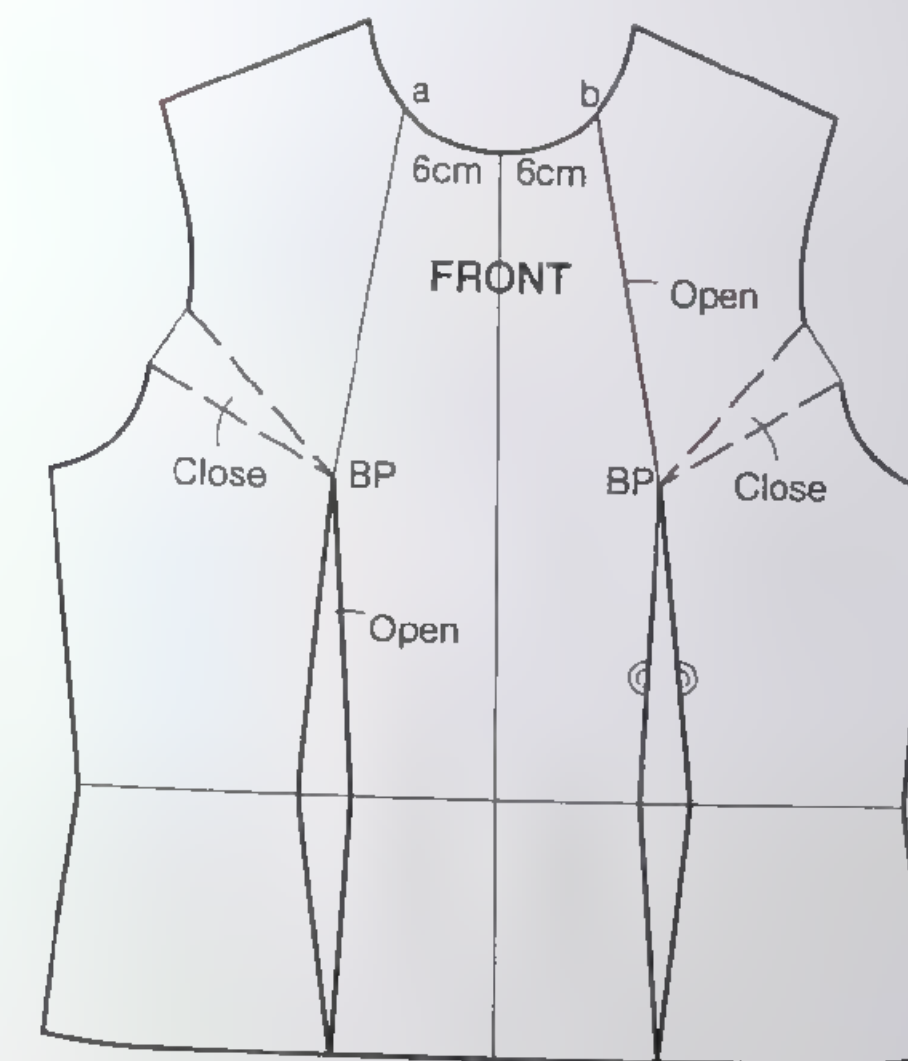


Violent interlocking waves B

Making the design seam vertical so that the angle of the wave is pointed creates a frozen peak like you might see at the North Pole.

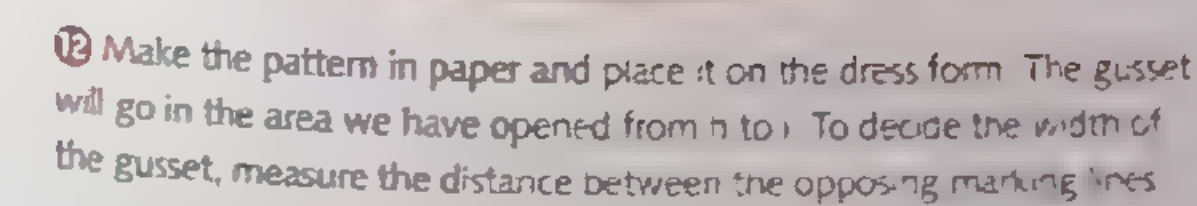
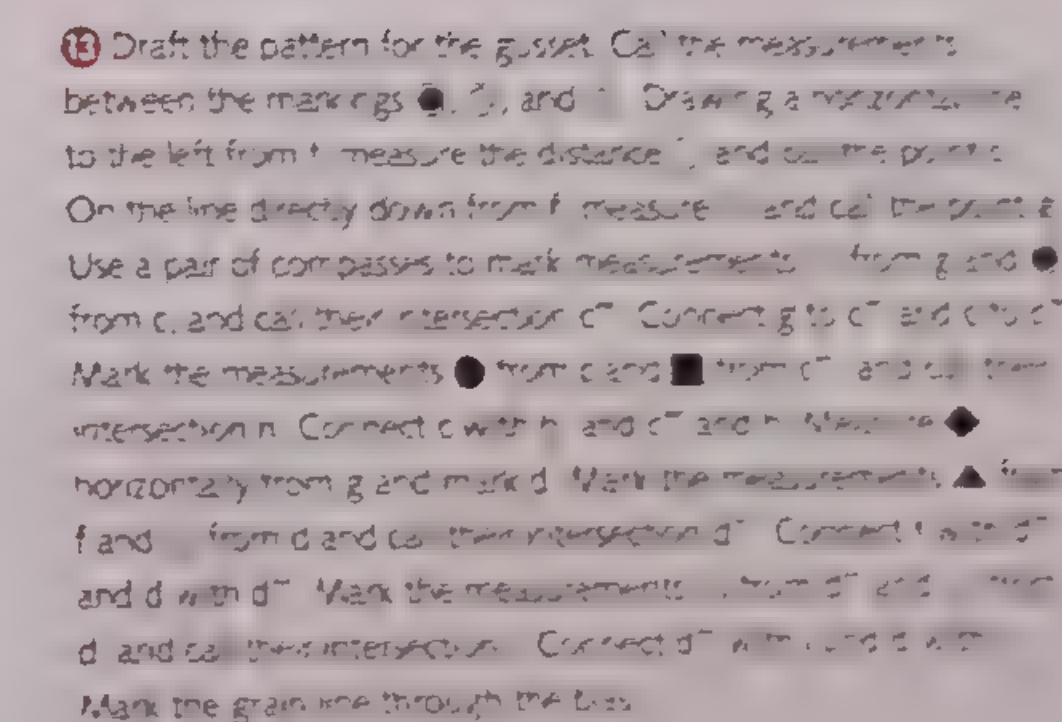
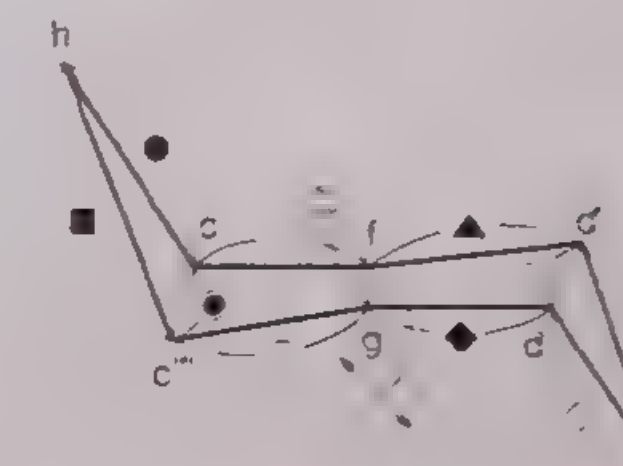
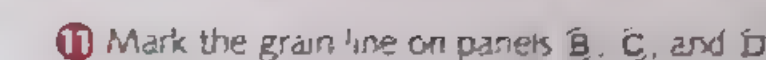
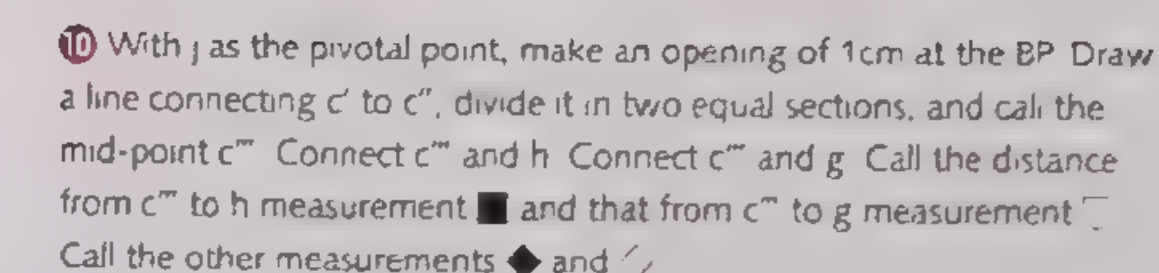
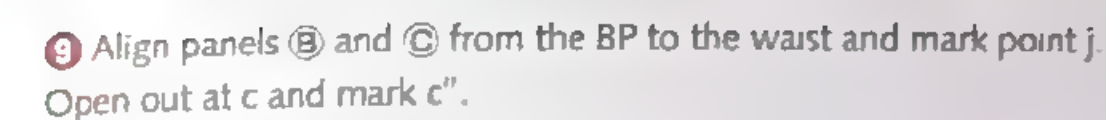
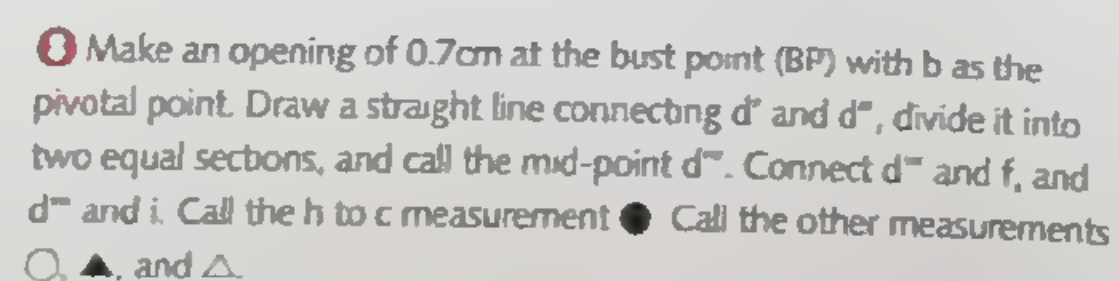
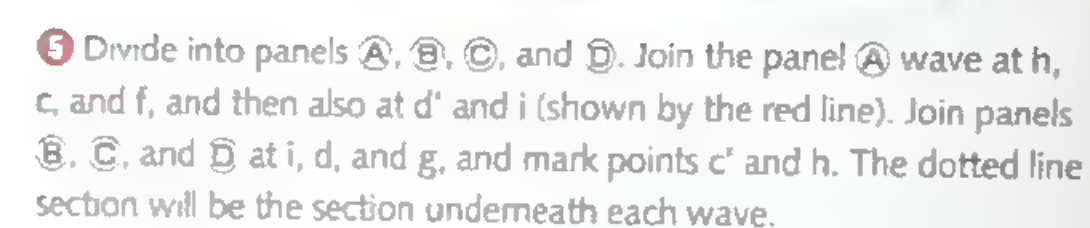
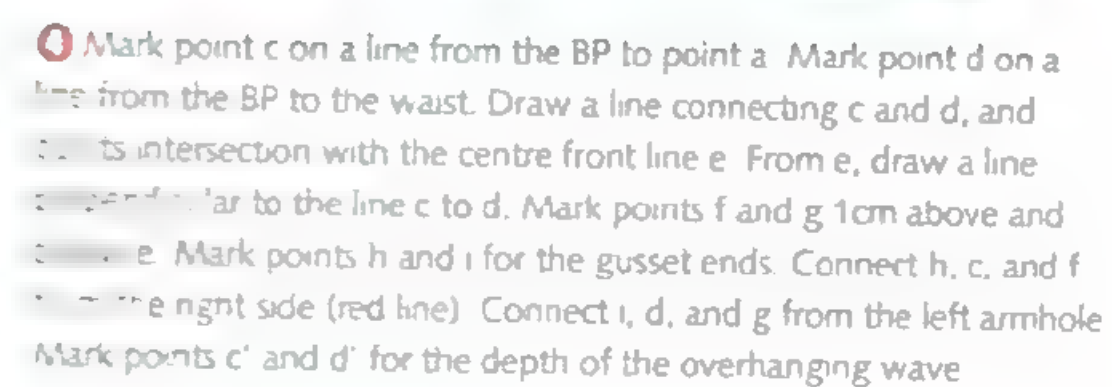


1 Draft the patterns for the front and back bodices.



2 Draw a reflection of the front pattern from 1 to draft the pattern for the entire front bodice. Mark points a and b on the neckline. Draw straight lines to connect a and b to their respective bust points (BP).

3 On the right bodice, close the armhole dart and open out from the BP to the hem. On the left bodice, close the armhole dart, open out at b, and mark point b'. Align the darts between the bust point (BP) and the waist.

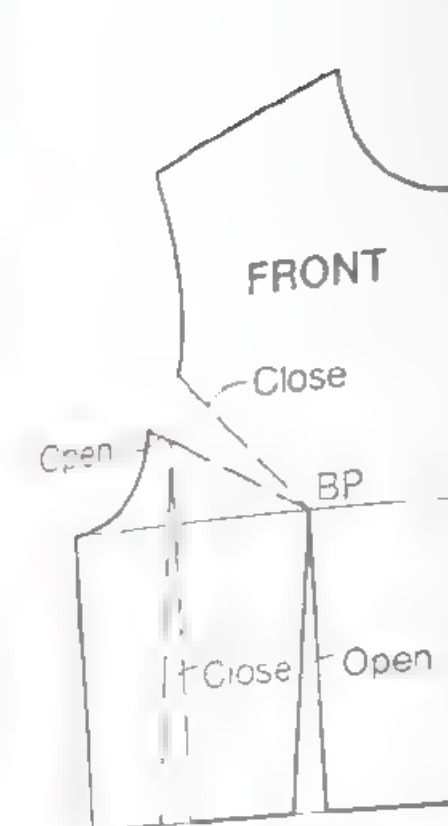
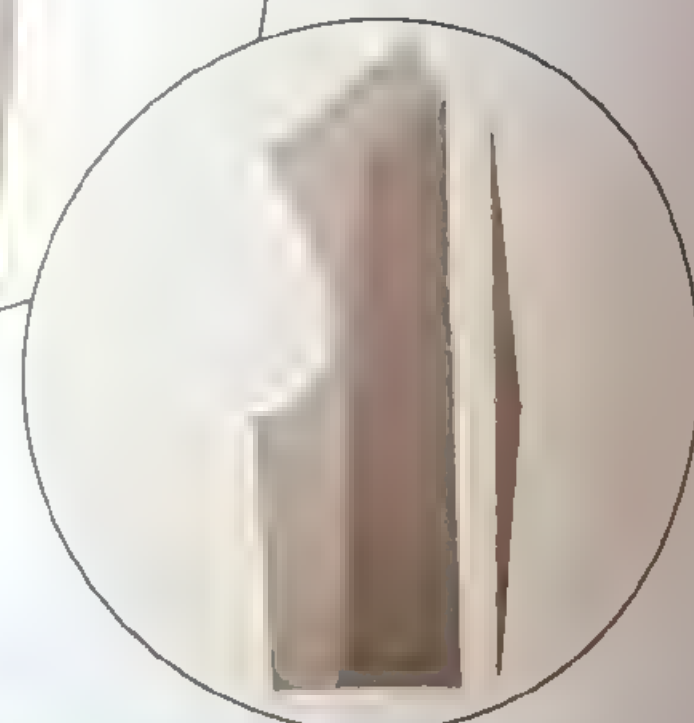


Paring down and opening out

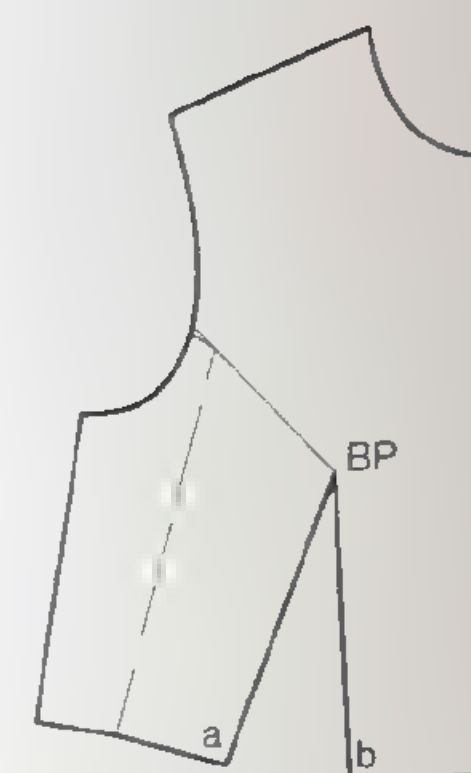
Just as we overstuff things by cramming in more than they can hold, we can make slits in a flat piece of paper and place it over a three-dimensional form. The slits will open up to reveal the form underneath.

Basic technique

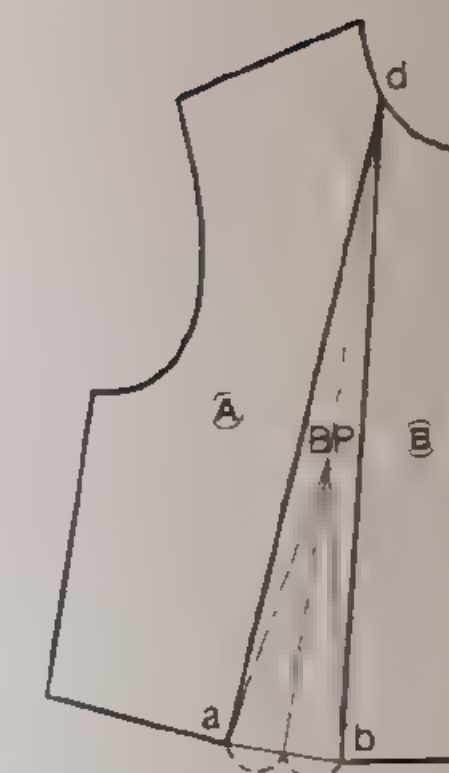
We'll make a pattern with the full part of the bust on the sloper (block) pared down, and then make some slits in the pattern. When we place this on the dress form, the undersized section at the full part of the bust will open out. Where the undersized section opens out will depend on where we make the slits, which allows for some interesting variations.



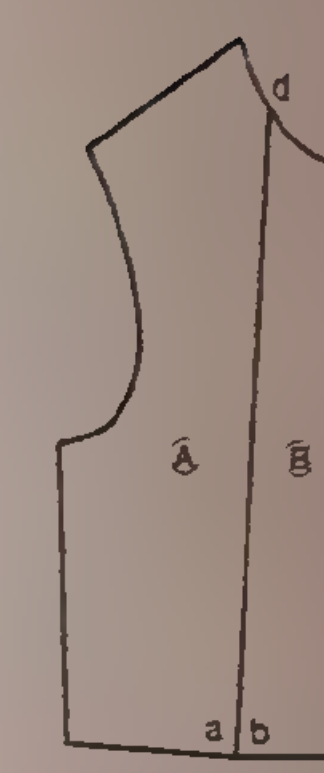
1 Move the darts as explained on page 24



2 Mark a and b.



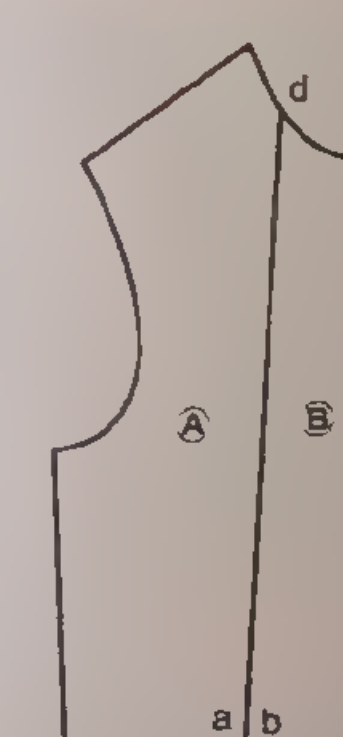
3 Divide the area from a to b into two equal sections and draw an extension line through the BP. Mark point d at the intersection with the neckline. Connect d to a and d to b. Divide into panels A and B.



4 Aligning A and B creates a pattern in which the fullness of the bust is pared down. Make a slit from d to a and d to b so that the undersized section will open out when placed on the dress form.



I took advantage of the opening created by the undersized section to make a curved pleat on the vertical



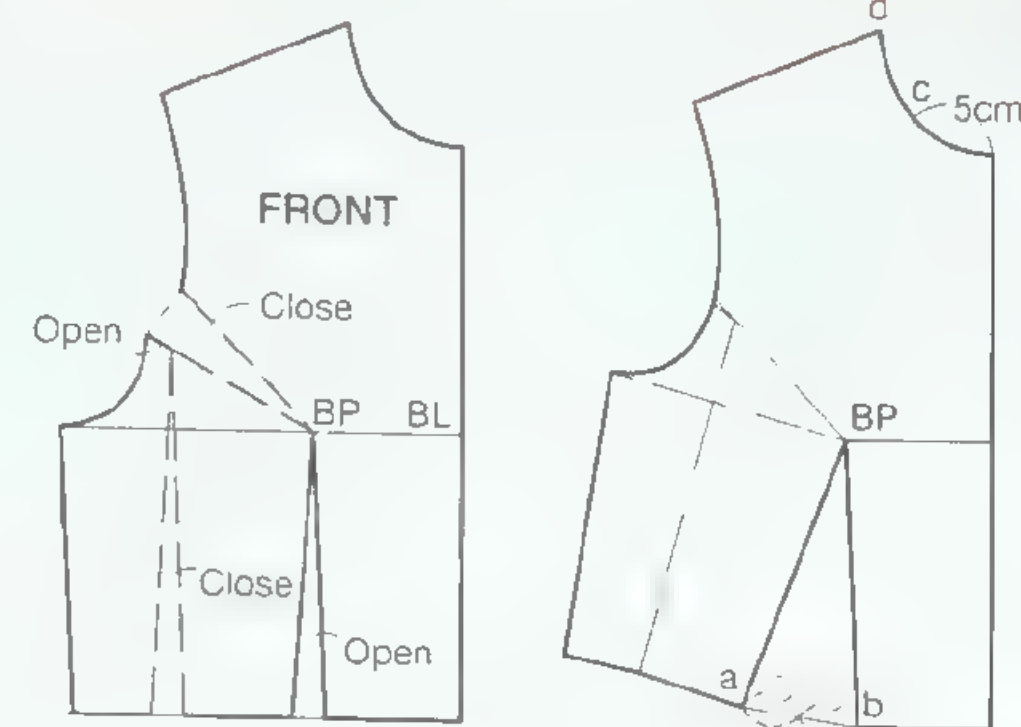
5 Draw a curved pleat from d to a on panel A.



6 Reverse the pleat of panel A and copy it from d to b on panel B. Sew together the pleats in panels A and B and place on the dress form. The undersized section will open out to give a three-dimensional shape. The photograph on the left shows the folded pleat in transparent form.

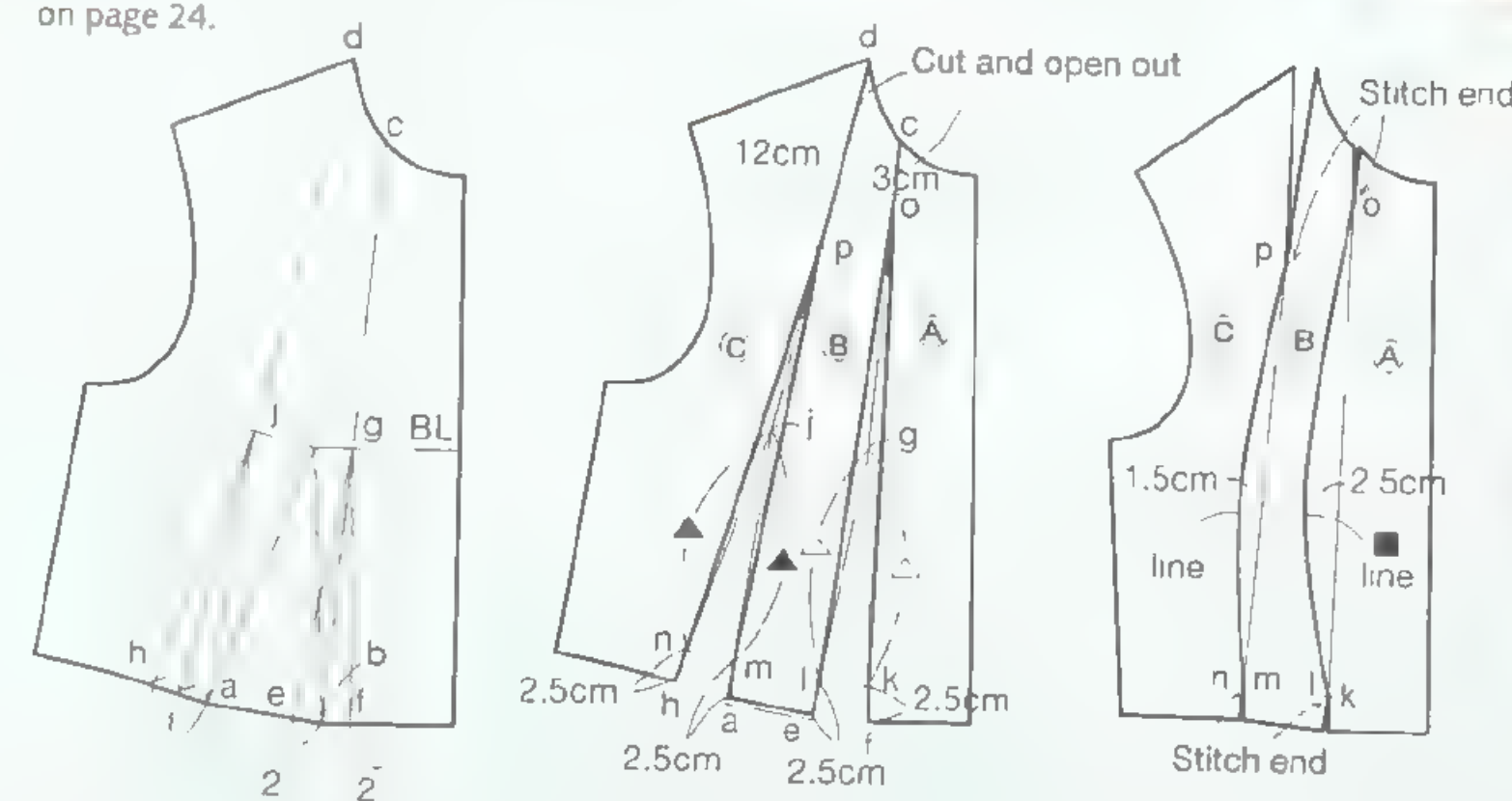


Pare down the fullness in the bust and make two curved pleats on the vertical



1 Move the darts as explained on page 24.

2 Mark a, b, c, and d. Measure

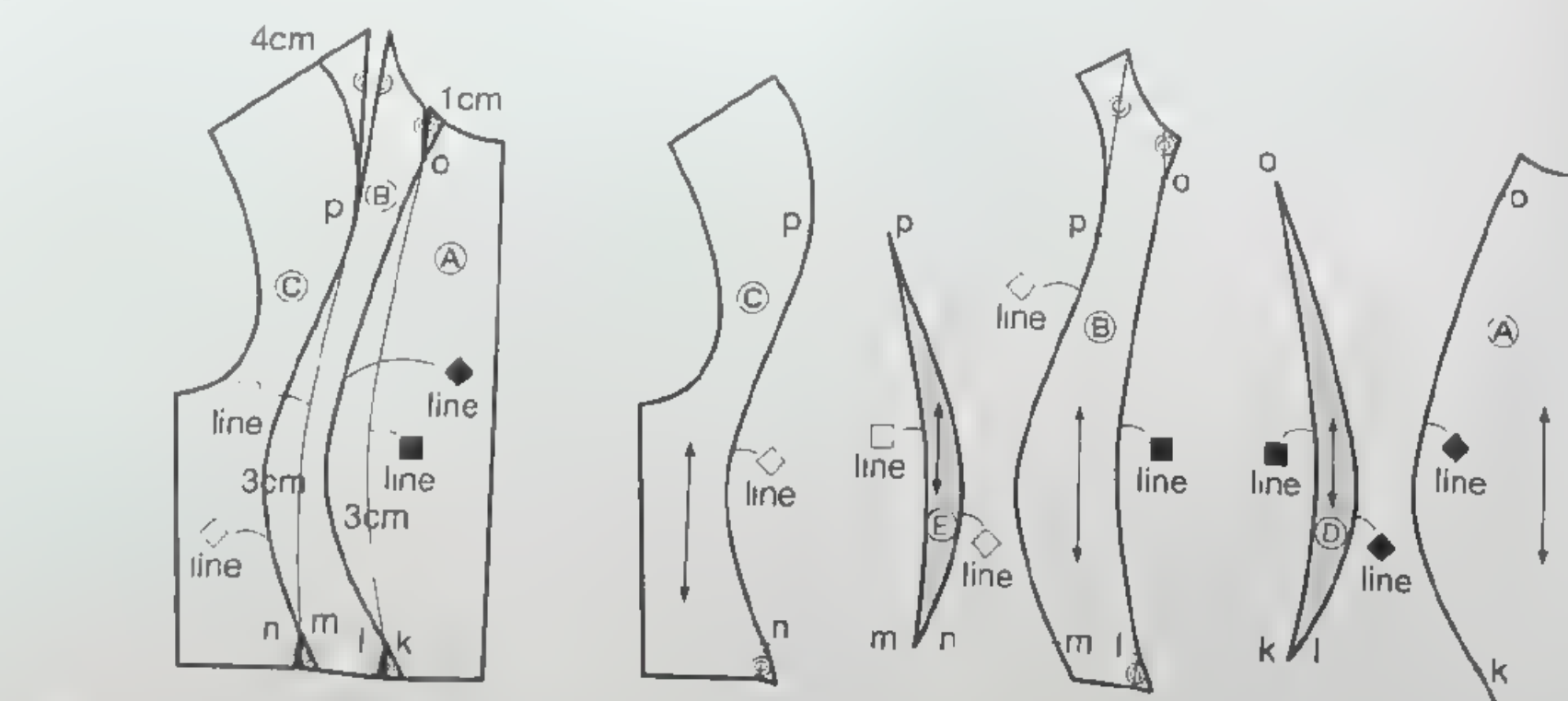


3 Divide the waist dart in two. Connect b and c and mark g at the intersection with the bust line. Measure $\frac{1}{2}$ from b. Mark e and f. Connect g to e and g to f. Measure $\frac{1}{2}$ from a and mark h. Divide a to h into two equal sections and mark the mid-point i. Connect d to i and mark the intersection with the bust line (BL) as point j. Connect j to h and j to a.

4 Mark points k, n, o, and p for the stitch ends. Connect o to k. Call the g to k measurement Δ . Measure Δ from g and mark the point l. Connect o to l. Call the j to n measurement Δ . Find m in the same way, and connect p to n and p to m. Divide into panels (A), (B), and (C).

5 Align o with k and l, and p with n and m and then draw the curves. Open from the stitch ends to the neckline and hem. Call the curve lines \blacklozenge and \blacklozenge .

6 Slit the curves to the stitch ends and place the pattern on the dress form. The undersized section will open out.



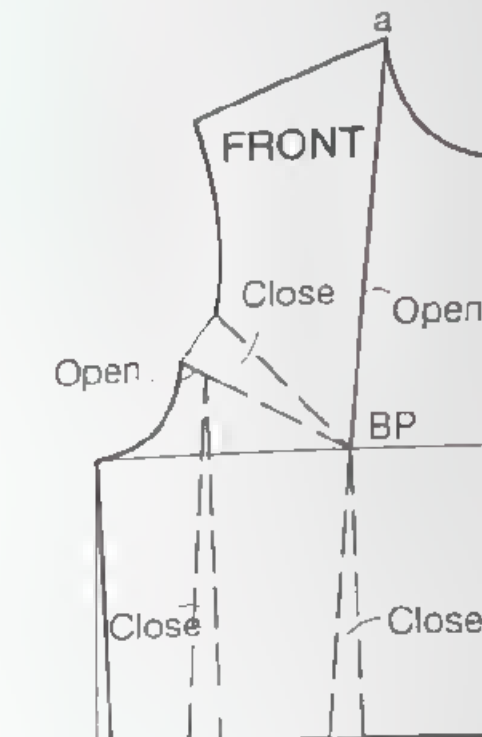
7 Mark pleats in any shape you like going through the stitch ends. Call them line \blacklozenge and line \blacklozenge respectively.

8 The finished patterns. On the inside, call the pleats that are not visible from the right side (D) and (E). Flip (D) and (E) over and copy them.

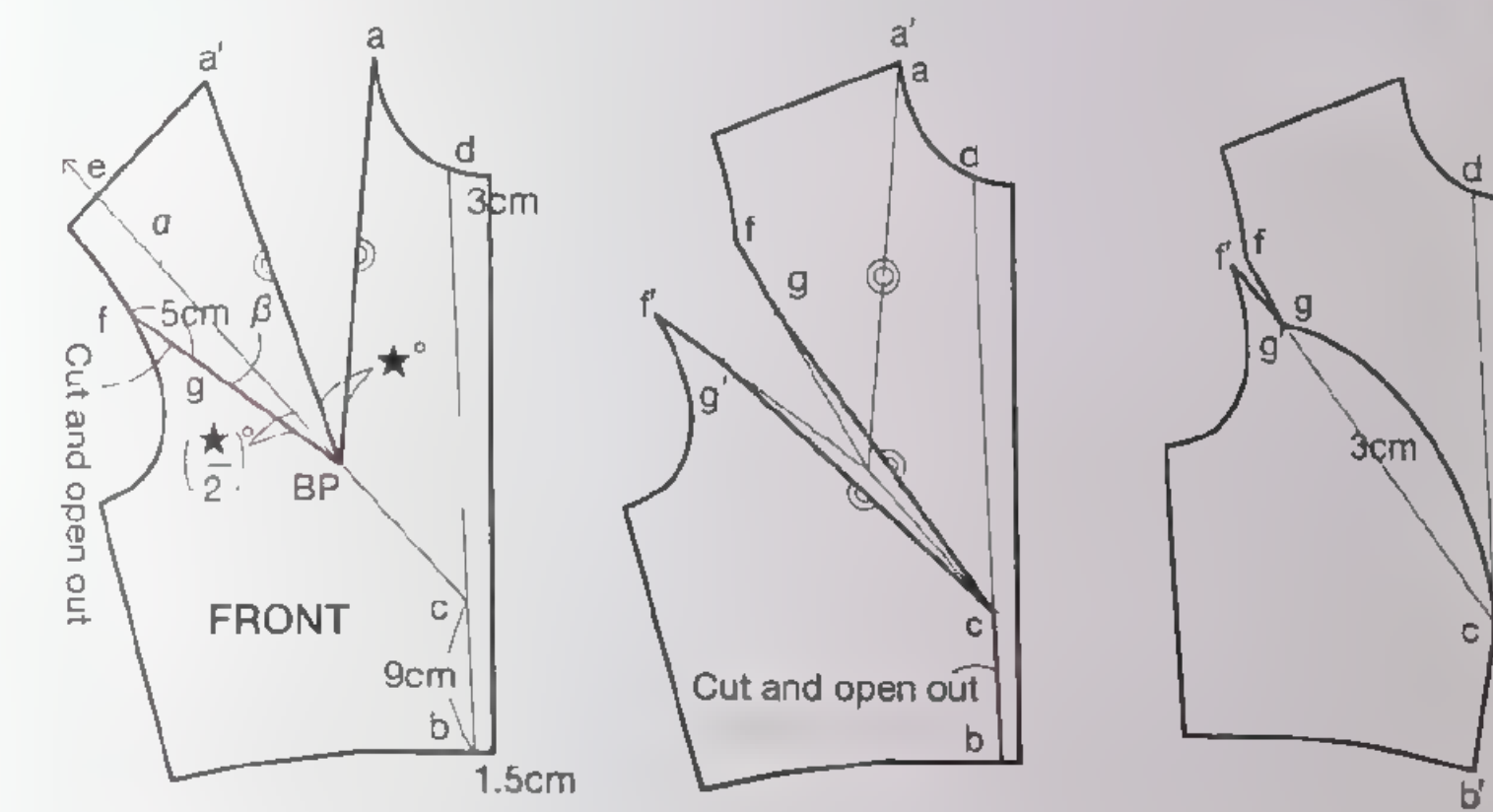


Pare down the fullness in the bust and open out on the diagonal

I tried making some L-shaped slits.



1 Move the darts by closing up the existing darts and opening up the pattern as indicated. Mark point a. Connect a with the bust point (BP) and make this the cutting and opening out line.

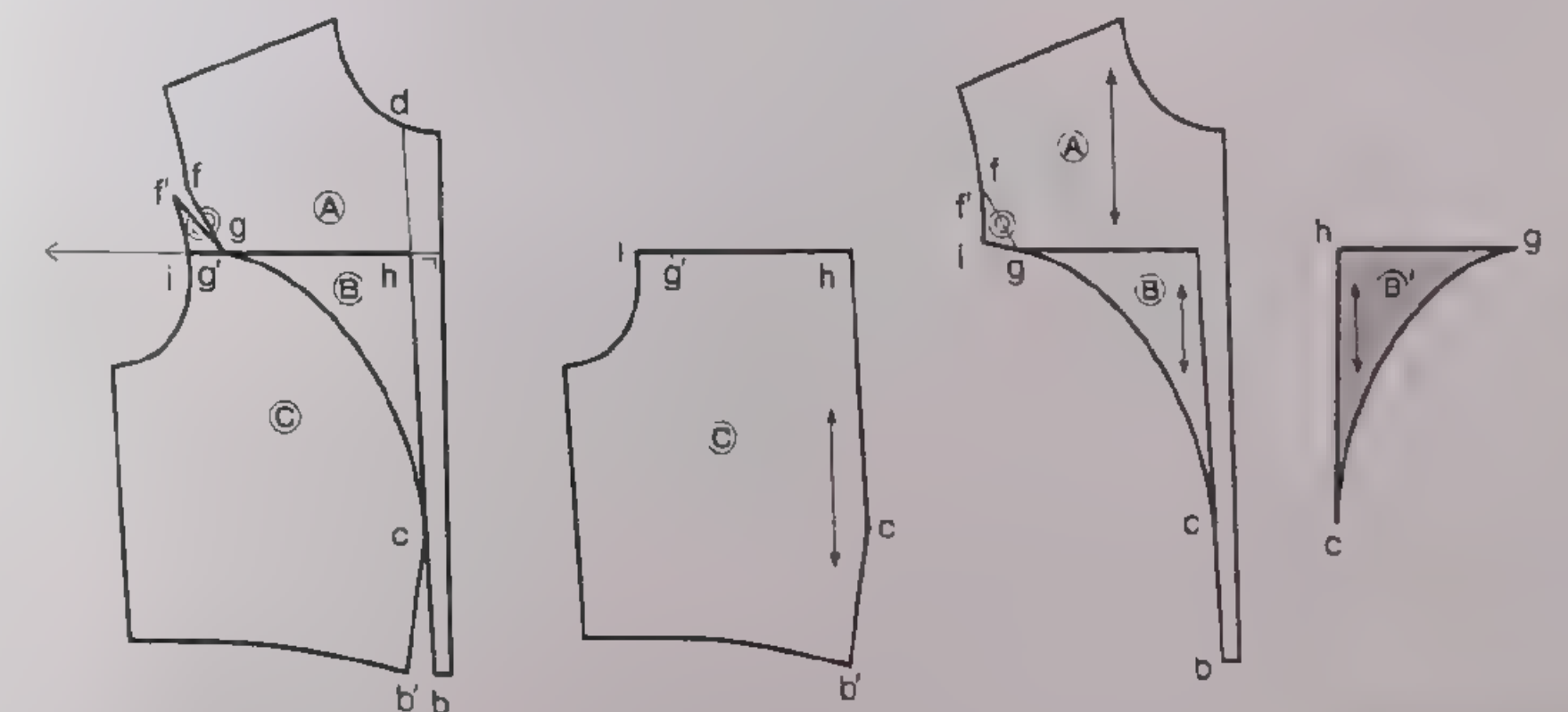


2 Close the dart; a opens as far as a'. Call the opened angle \star° . Mark b, c, and d. Extend the line from c through the bust point (BP) and call the intersection with the shoulder line e. Call the line from the BP to e line α . With the BP as the pivotal point, mark an angle $\frac{\star}{2}^\circ$ from the α line and draw the β line connecting the BP to the armhole. Mark f and g on the β line.

3 Close a and a' and, with c as the pivotal point, open out f. Mark f' and g'. Connect c and g, and c and g'.

4 Align c to g and c to g'. Open out at b and mark b'. Draw a curve from c to g and g'.

5 When we place this on the dress form, the undersized section will open out.

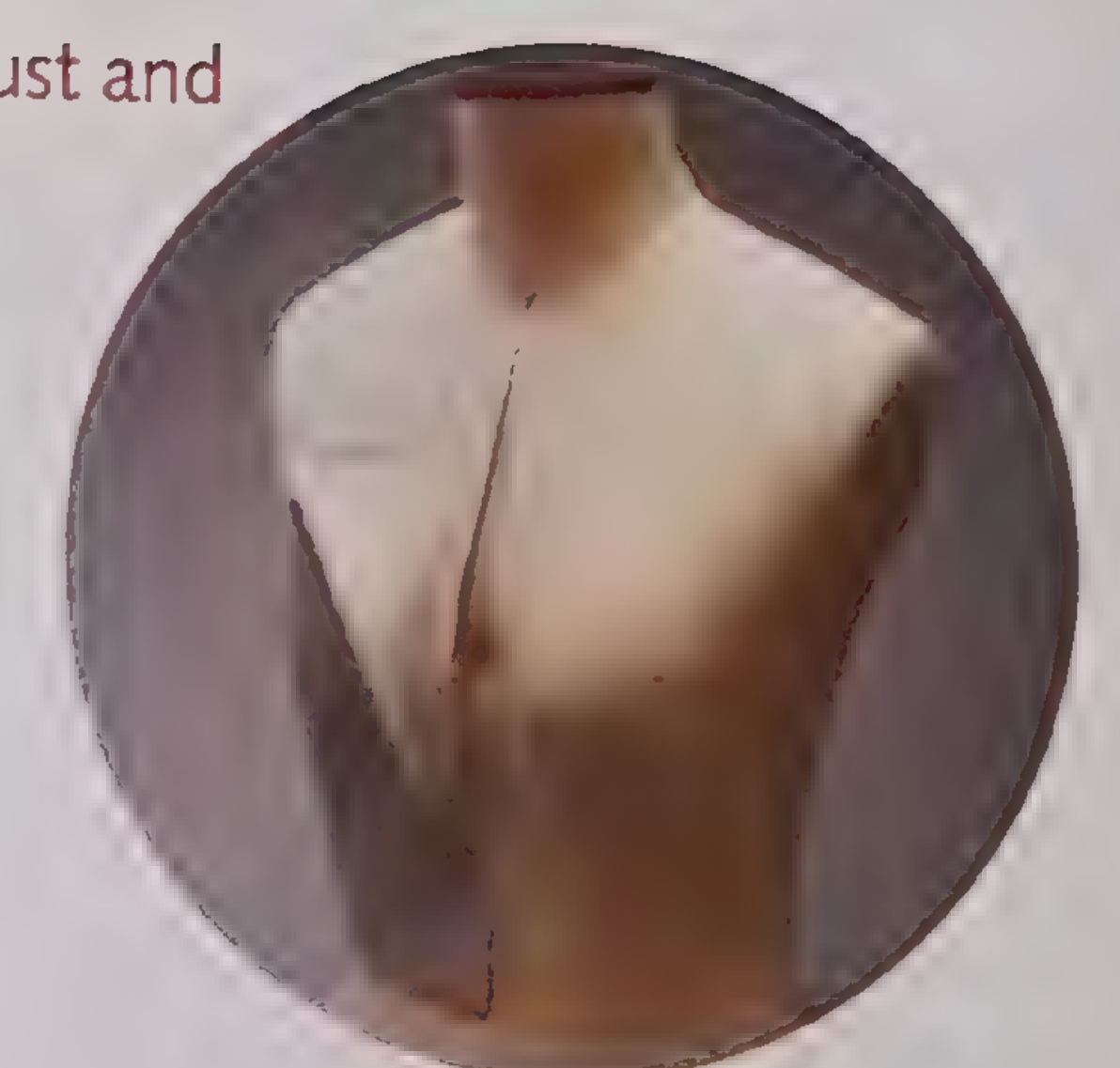


6 Draw a perpendicular line from the centre front line to g and g'. Mark h and i. Divide into panels (A), (B), and (C).

7 Pattern (C)

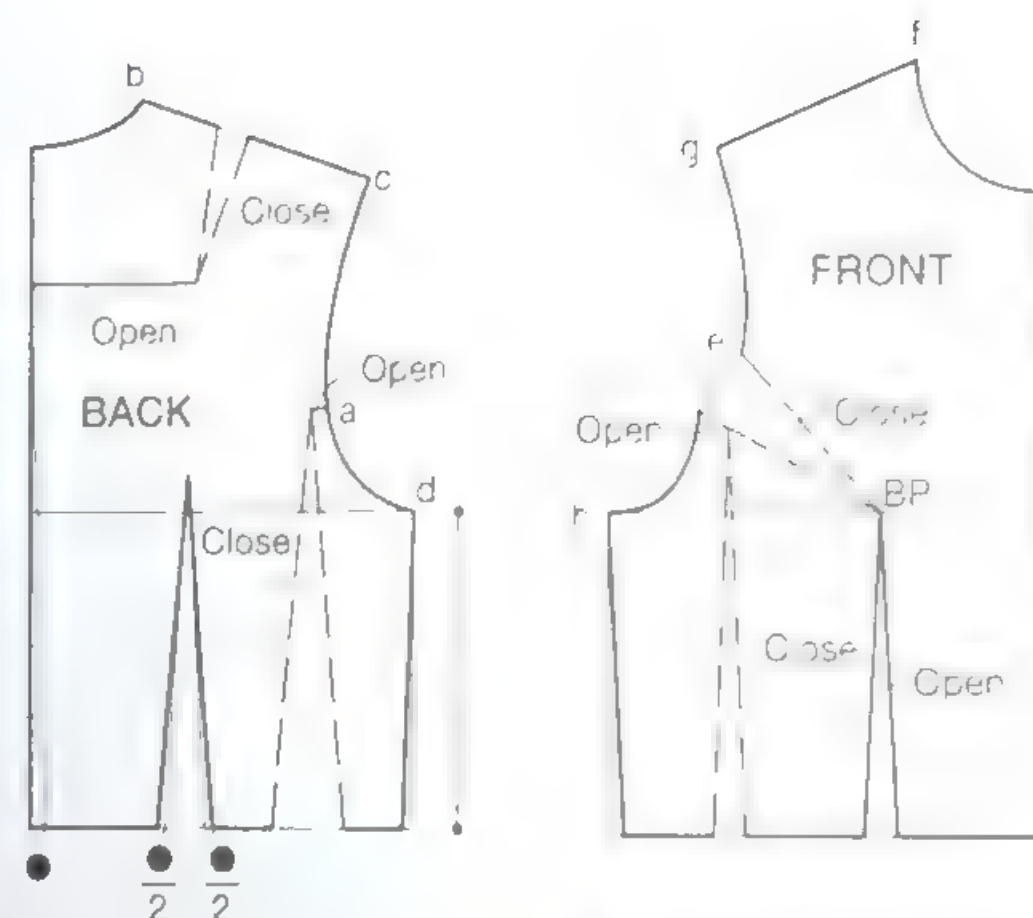
8 Align f and f' with g (patterns A and B).

9 Flip over pattern B, copy f and g, and B.



Pare down the roundness of the shoulder and open it out

The three-dimensional feel of the garment changes when you raise or lower your arms.

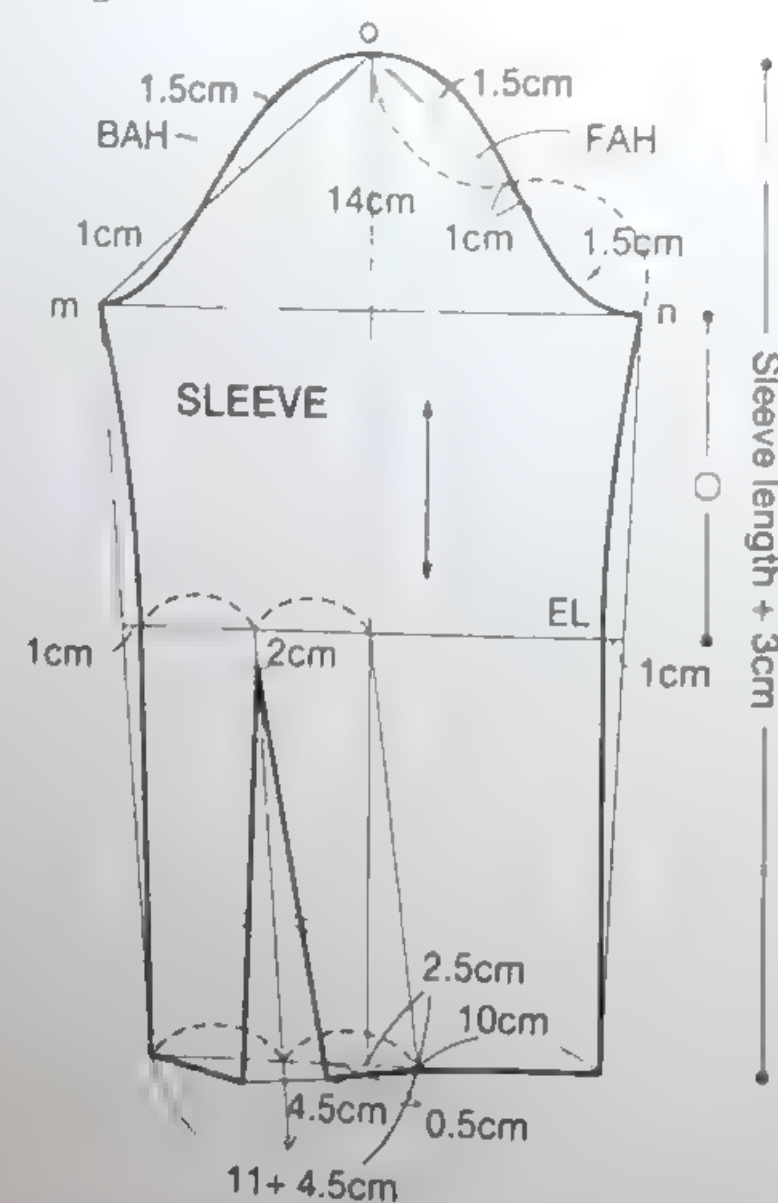


1 Move the darts by closing the existing darts and opening up the pattern as indicated. Mark a, b, c, and d. Draw the cutting and opening out lines.

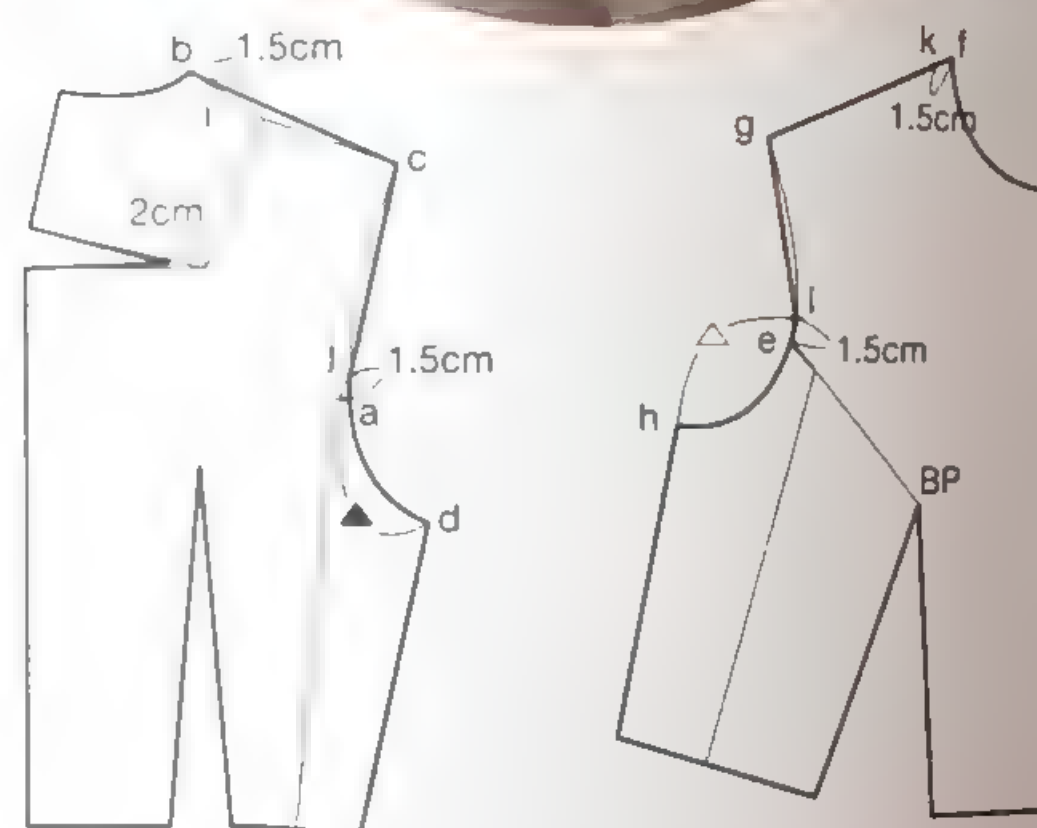
2 Move the darts as explained on page 24. Mark e, f, g, and h.

3 Draw a straight line to connect b to c. Mark i and j. Draw a straight line to connect c and j. Call d to j measurement Δ .

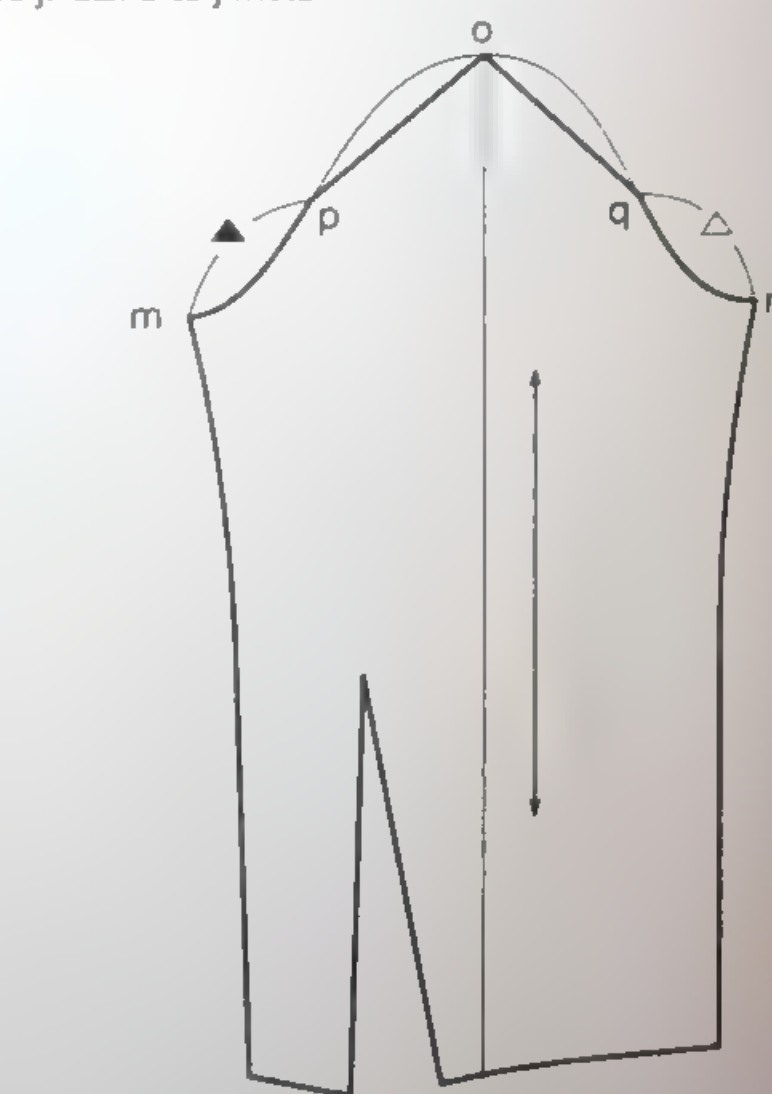
4 Mark k and l. Draw a straight line to connect g and l. Call h to l measurement Δ .



5 Draft the pattern for the sleeve. Mark m, n, and o.



6 Measure Δ from m and mark the point p. In the same way, measure Δ from n and mark the point q. Draw straight lines to connect o to p and o to q.



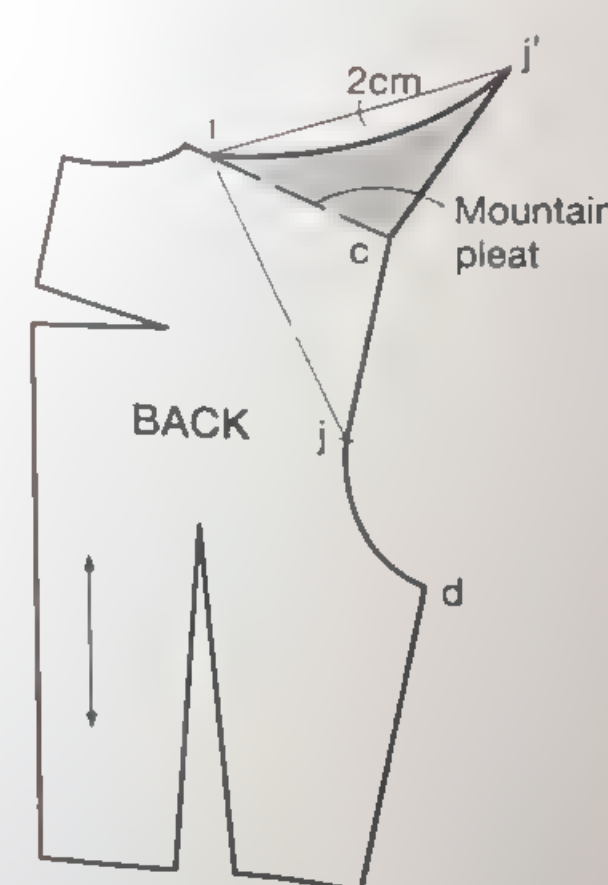
7 Set down the bodice and sleeve patterns, aligning i with k, j with p, and l with q. Some areas will overlap. The overlap will cut down the roundness in the shoulders, making them flatter.



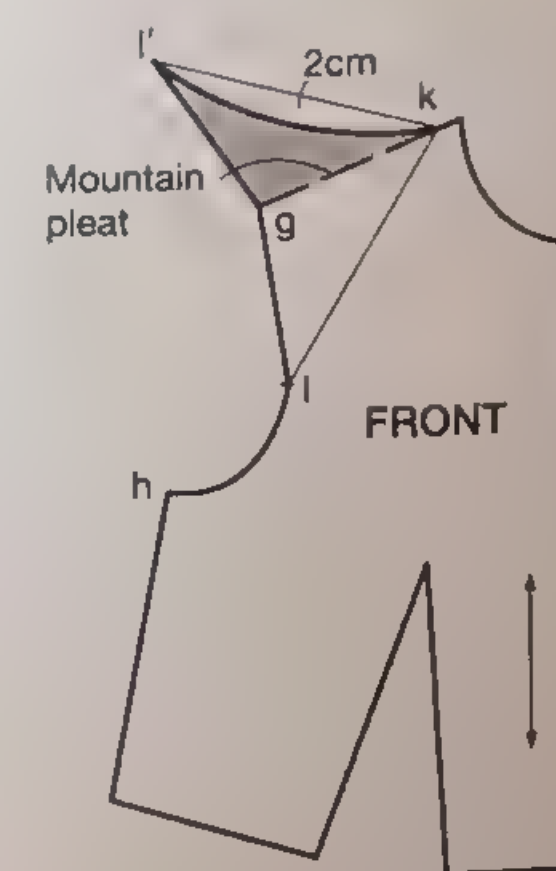
8 Mark k and l. Draw a straight line to connect g and l. Call h to l measurement Δ .



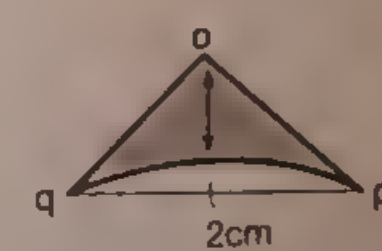
The overlapping areas of the patterns showing through.



9 Mark a point symmetrical to j around axis i to c and call it j'. Draw a curve from i to j'. The line i to c will form the mountain pleat, and the area i to j' to c is reversed.



10 Draw curves from i to j, k to l, and p to q.



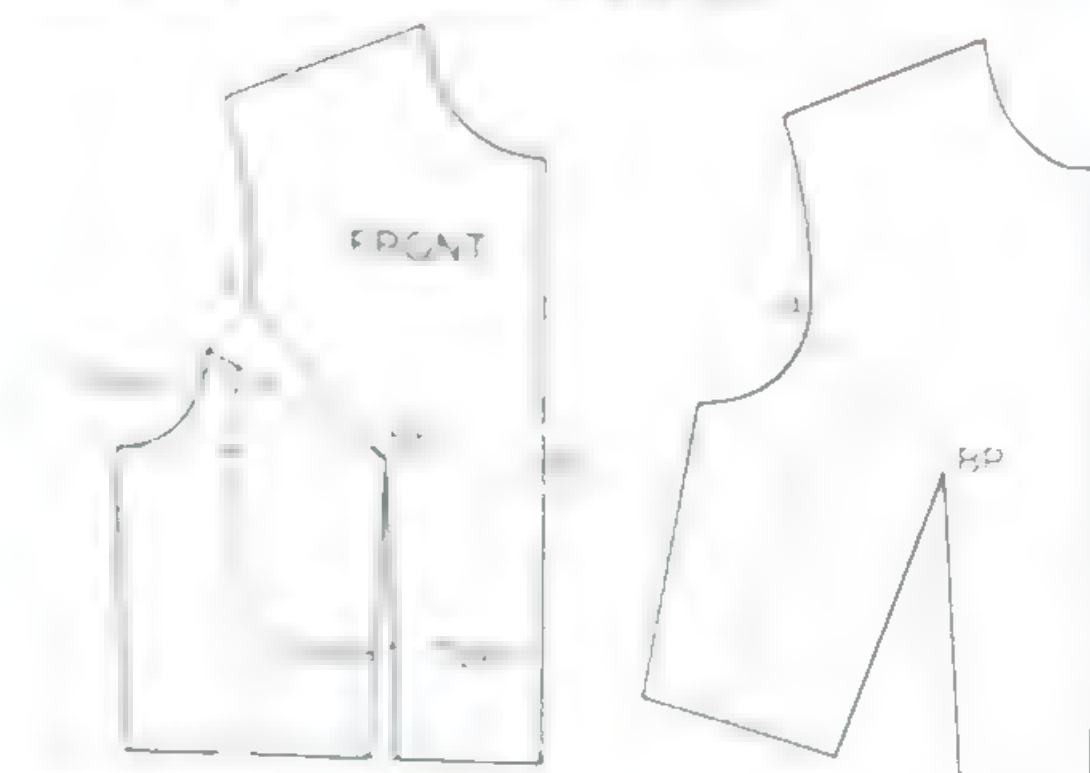
11 Draw the triangle opq flipped horizontally. Draw a curve from q to p.



12 Draw curves from i to j, k to l, and p to q.

Pare down the fullness in the bust and open out into triangles

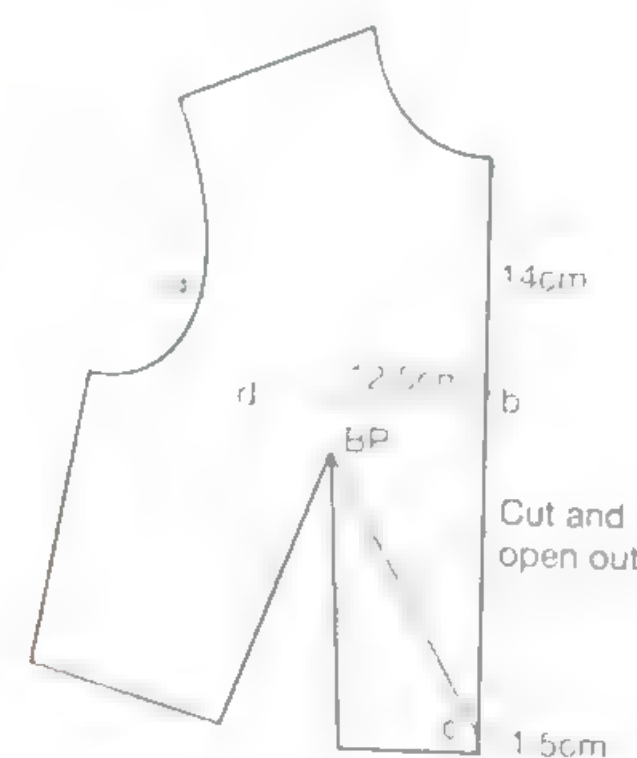
When the dress is made, the three window-like blades forming the bodice will be visible.



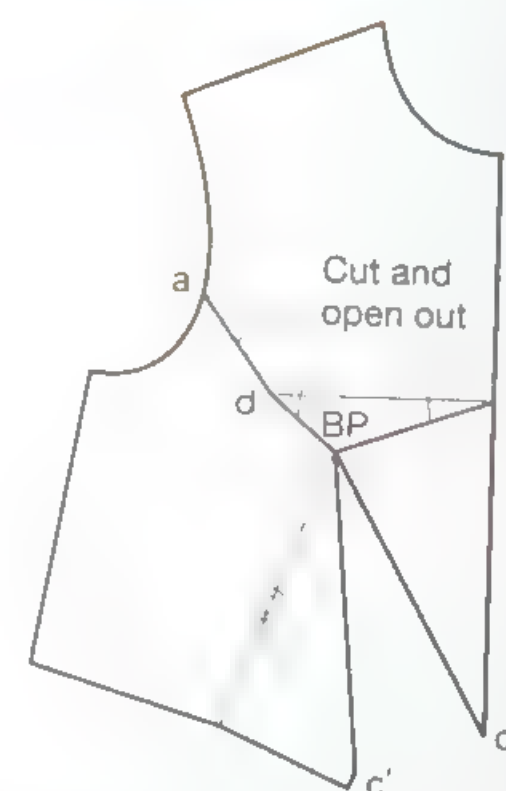
1 Trace onto the pattern the cutting and opening out line from c to the bust point (BP).



2 Trace onto the pattern the cutting and opening out line from c to the bust point (BP).



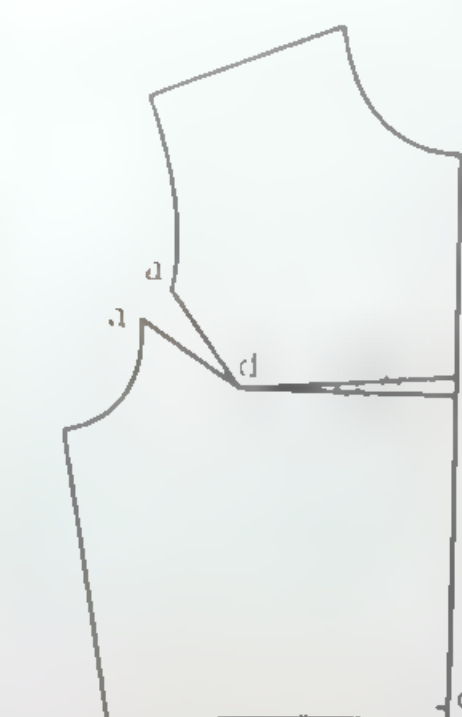
3 Trace onto the pattern the cutting and opening out line from c to the bust point (BP).



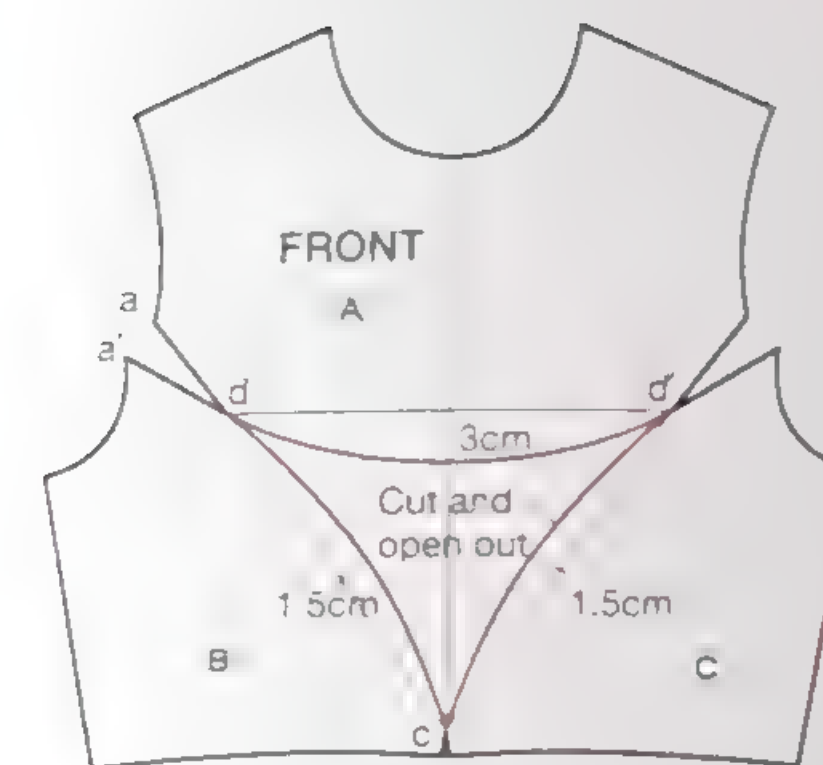
4 Close the dart and open out the pattern as indicated. Mark c'. Draw cutting and opening out lines from d toward a and the bust point (BP), and draw a cutting and opening out line from b to the bust point (BP).



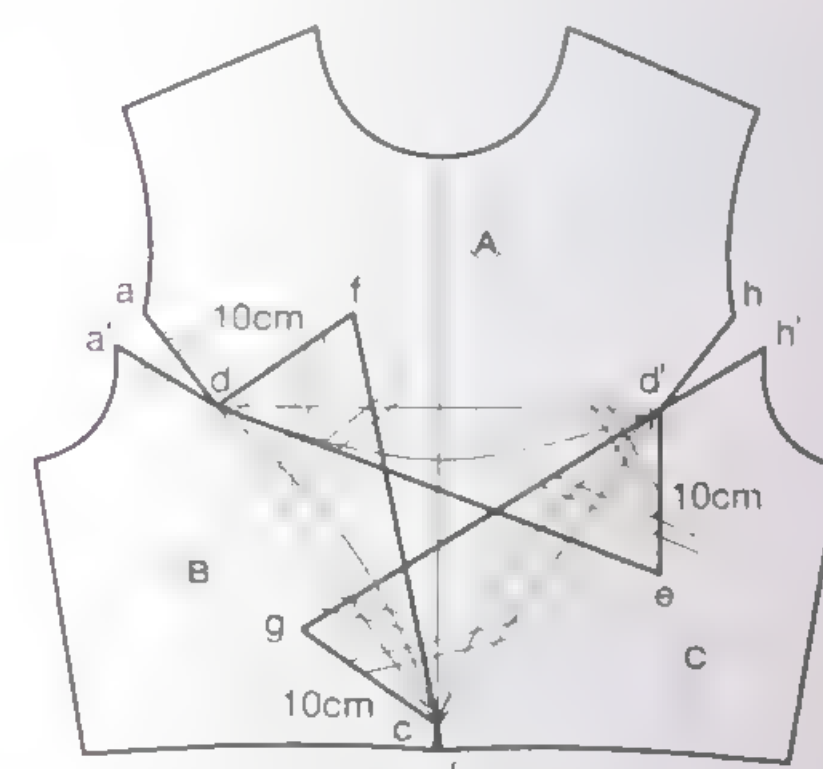
5 Align c and c', and then, with d, b, c, and c' as the pivotal points, open out a and the bust point (BP). The BP will overlap, and a will open out as far as a'. The centre front remains off the vertical. The photograph shows the overlapping areas of the patterns.



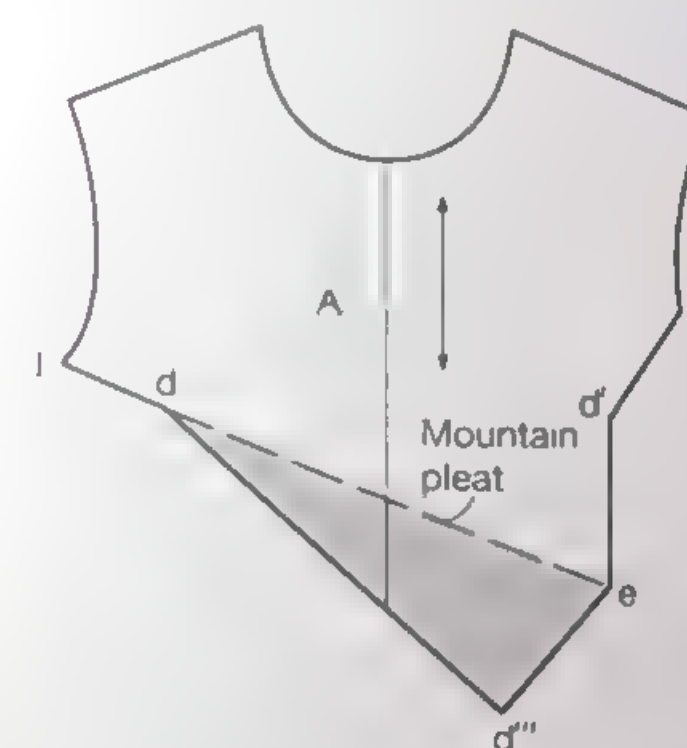
6 To make the centre front vertical from c along the neckline, with d as the pivotal point, overlay b as far as b'. The photograph shows the overlapping areas of the patterns. The fullness in the bust has been pared down.



7 Copy the pattern from 6 to make a full front bodice pattern. Draw curves to connect d to d', d to c, and d' to c. Divide into panels A, B, and C.



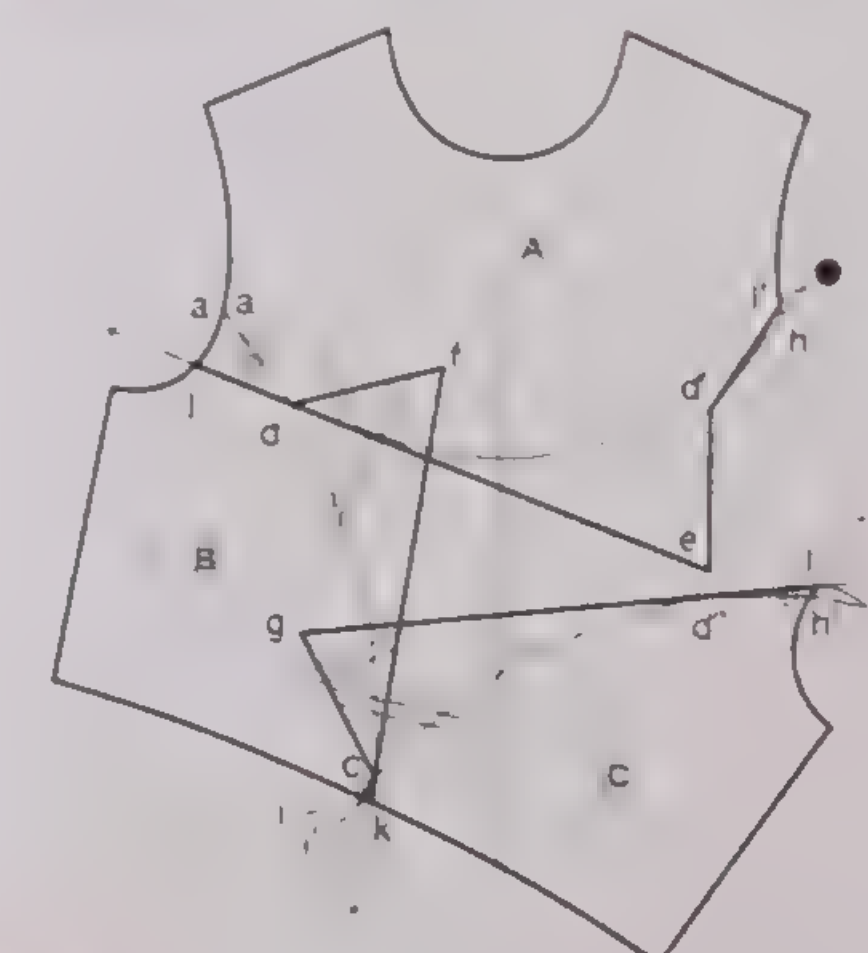
8 On the line 10cm directly down from d', mark e. Connect e to d and e to d'. Mark f and g, and connect d to f and f to c, and g to c and g to d' in the same way. Mark h, h', l, and l'.



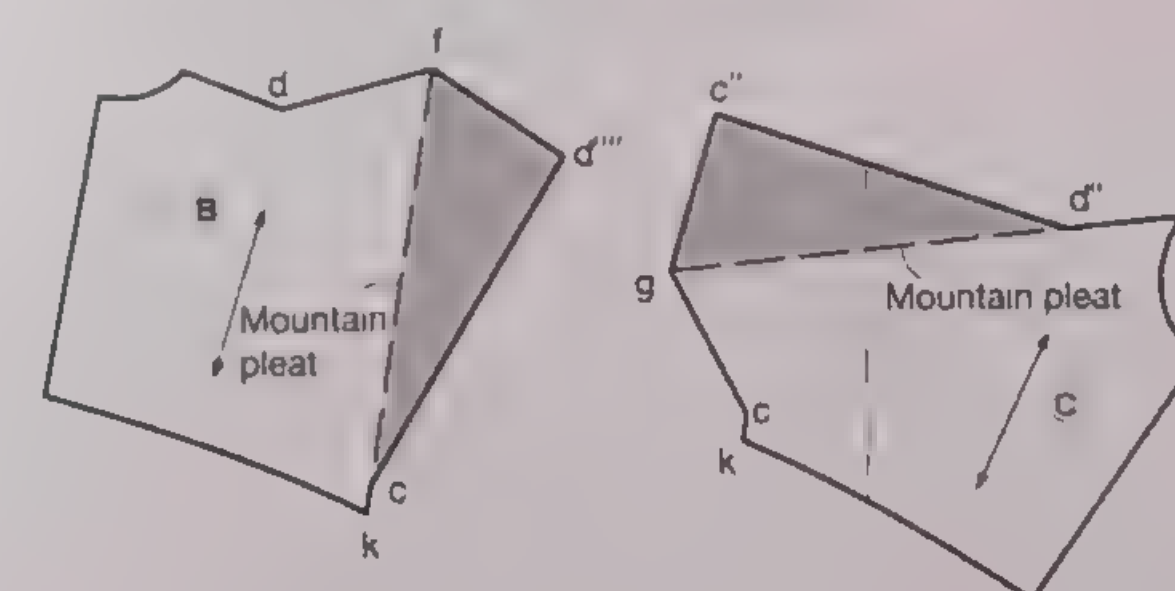
9 Make the patterns. On panel A, copy point d' reversed around axis line d to e, calling the resulting point d'', and then connect d, d'', and e.



10 Cut and open out d to d', d to c, and d' to c. Assemble and place on the dress form.



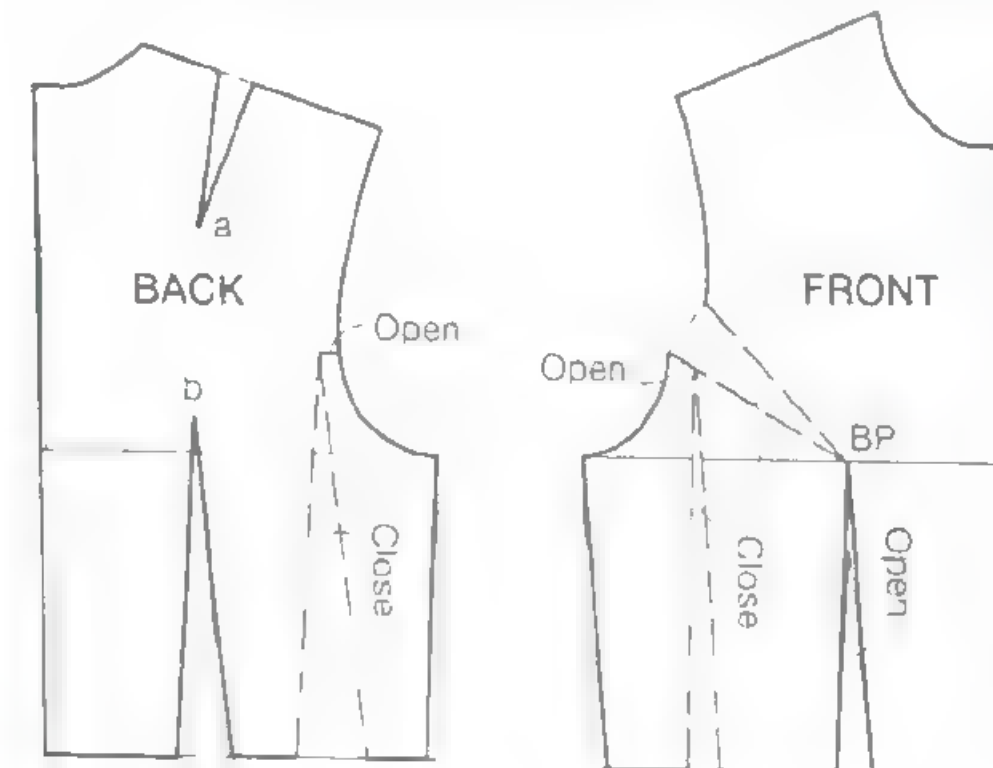
10 With d as the pivotal point, align a and a'. With c as the pivotal point, align l and l'. d' moves away. Connect e to d and extend the line. Call the intersection with the armhole j. Connect and extend f to c, and call the intersection with the waistline k. Draw a slight extension of the left armhole from h' toward the shoulder tip. Connect g to d'' and extend the line, calling the intersection with the armhole l. Call h' to l measurement. Measure the distance from h toward the shoulder tip. Call this point l', and connect d' and l'.



12 On panel B, determine point d''' in the same way and then connect f, d''', and c. On panel C, determine c'' and connect d'', c'', and g.

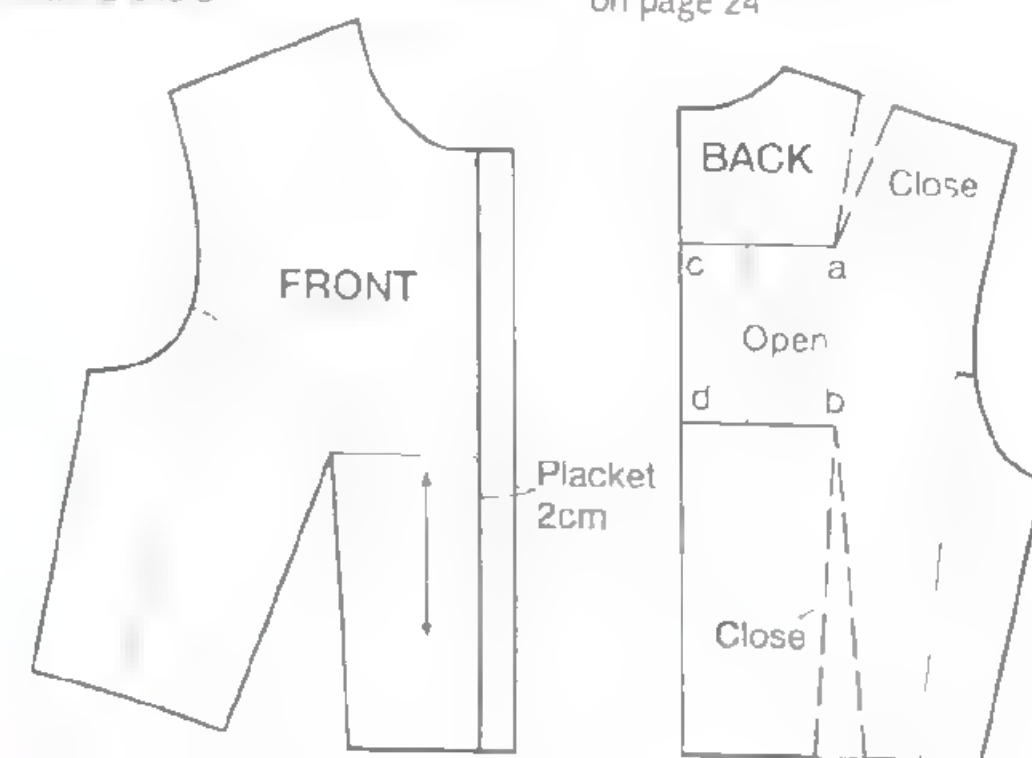
Pare down the roundness at the back and open out

Make a chain of interlocking mountains at the back.



1 Move the darts as indicated. Draw a and b.

2 Move the darts as explained on page 24.

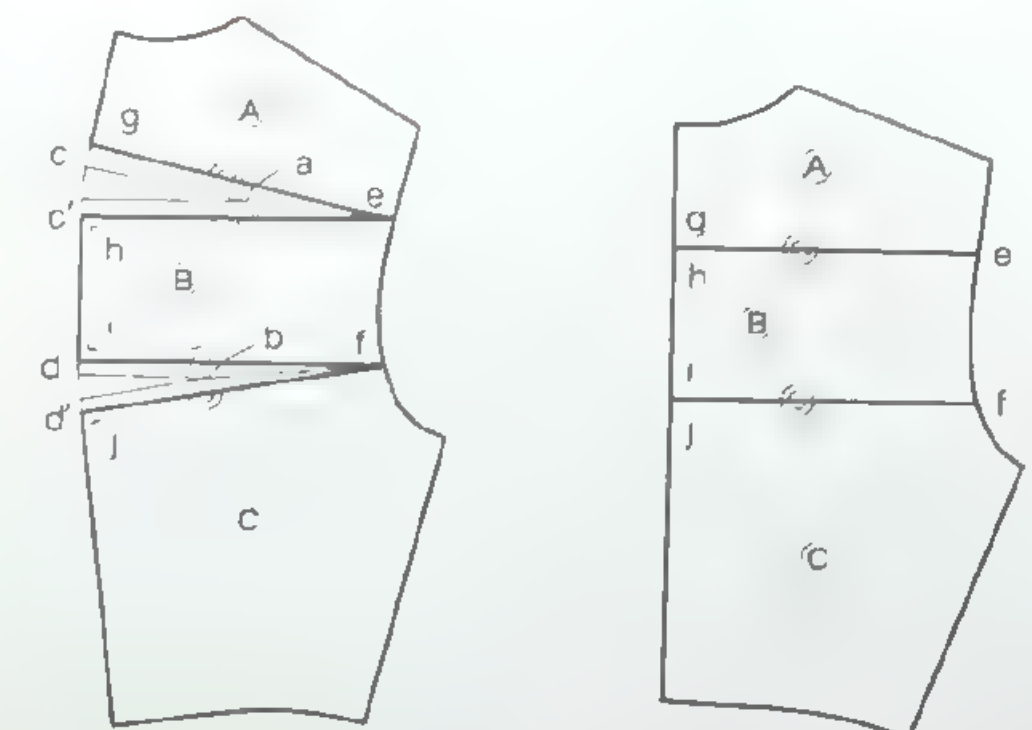


3 Draw the placket.

4 Mark c and d perpendicular to the centre back from a and b.

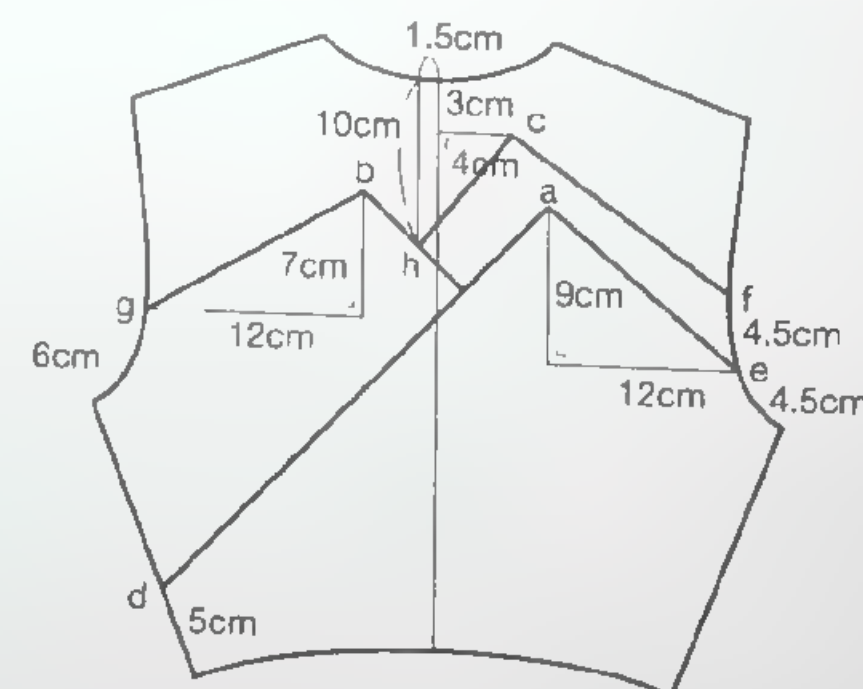
5 With a and b as the pivotal points, close the darts to open out at c and d. Mark c' and d'.

6 Divide c to c' into two equal sections, connect to a and extend. Call the intersection with the armhole e. Mark f in the same way.

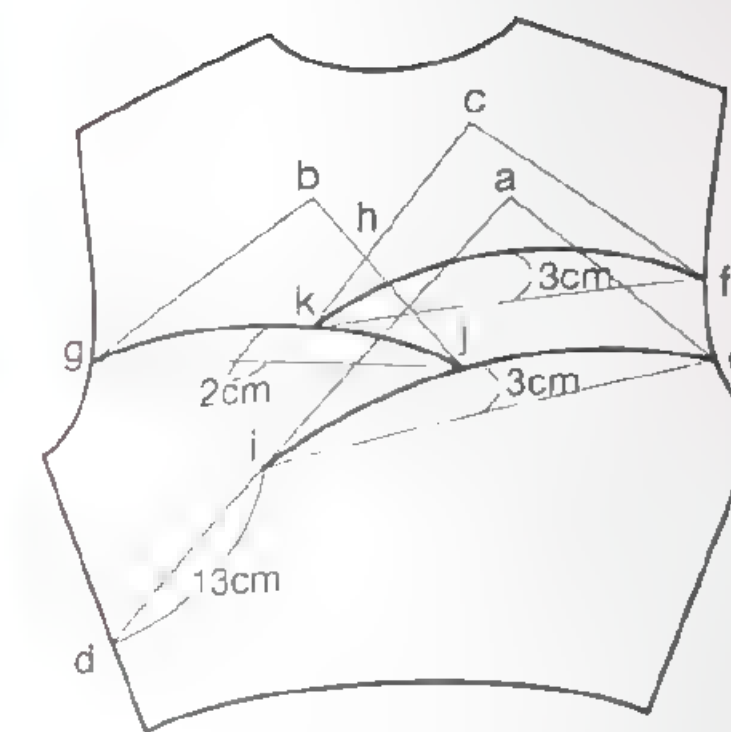


7 Draw a straight line from e perpendicular to the centre back. Mark g on the centre back line. Mark h, i, and j in the same way. Divide into panels A, B, and C.

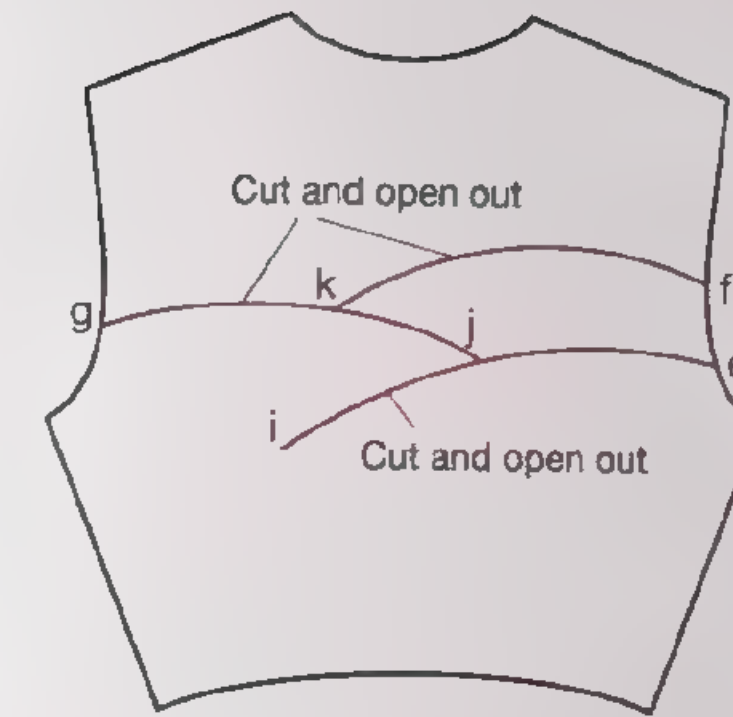
8 Join A, B, and C. The roundness in the shoulders is pared down, making them flatter.



9 Copy the pattern from 8 to make a full back bodice pattern. Draw the lines as shown so that the mountains will interlock. Mark a, b, c, d, e, f, g, and h.



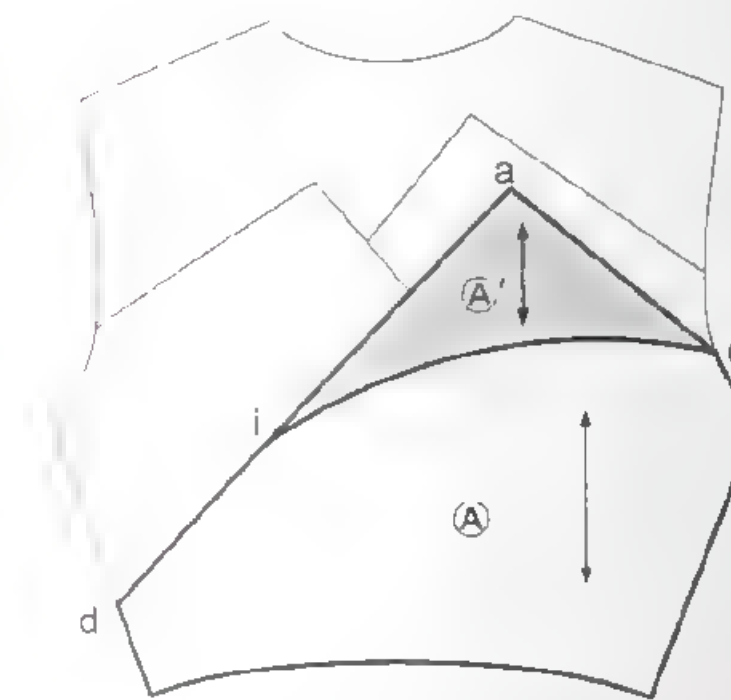
10 Mark point i between a and d. i will be the foot of the mountain and the start of the opening. Draw a curve connecting i to e. Mark j. Draw a curve connecting g to j. Mark point k at its intersection with the extension of c to h. Draw a curve connecting k to f.



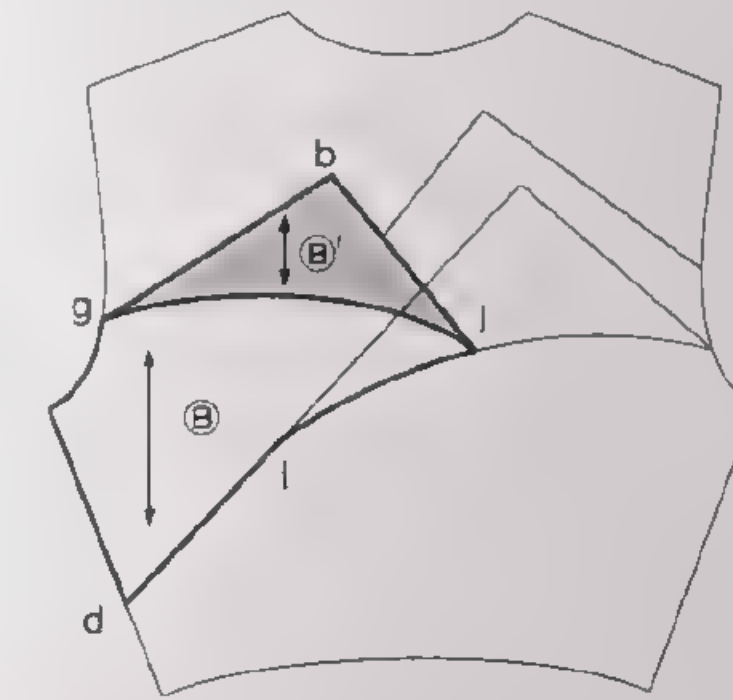
11 i to e, g to j, and k to f will be the cutting and opening out lines.



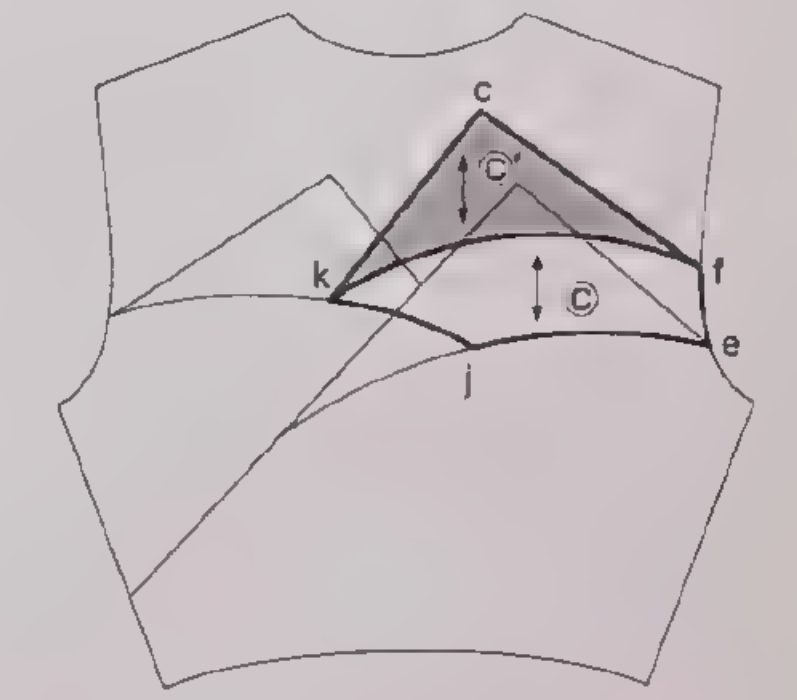
12 Cut and open out, leaving points e, f, g, i, j, and k intact. When you place this on the dress form, the undersized sections will open out.



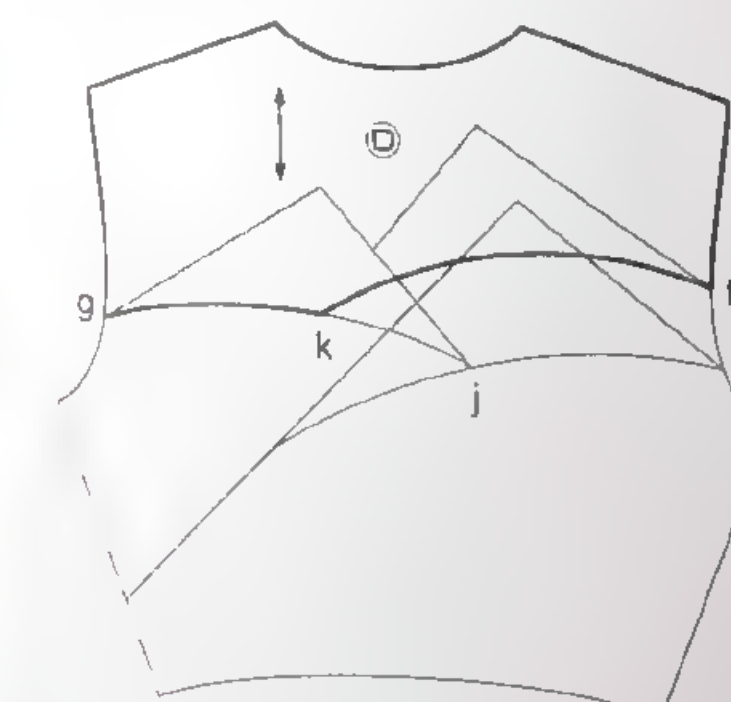
13 Make the patterns. A will be the area delineated by the points d, i, a, and e through to the waist. The grey area delineated by i, a, and e will be A', which will be invisible from the right side.



14 B will be the area delineated by the points g, b, j, i, and d. The grey area delineated by g, b, and j will be B', which will be invisible from the right side.

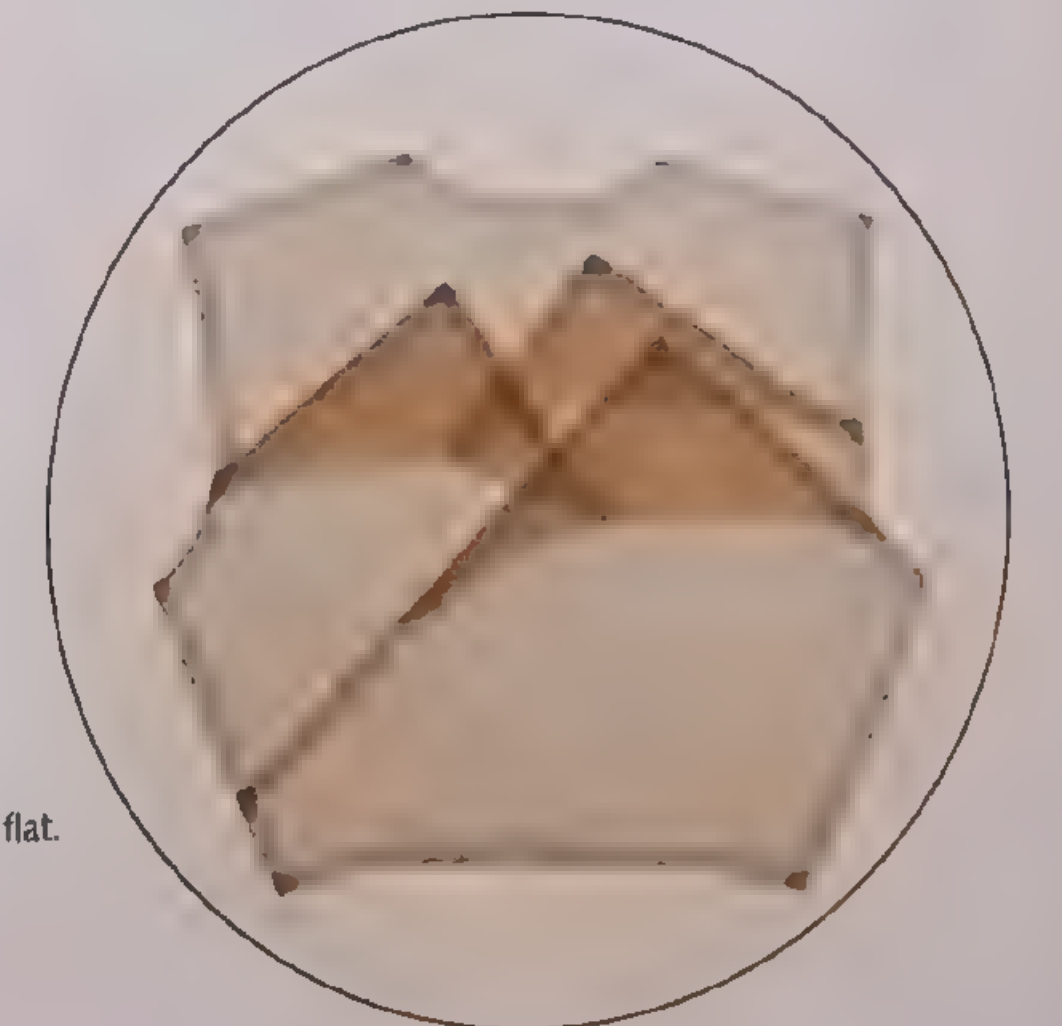


15 C will be the area delineated by the points k, c, f, e, and j. The grey area delineated by k, c, and f will be C', which will be invisible from the right side.



16 D will be the area delineated by g, k, and f through to the neckline.

The pieces laid flat.



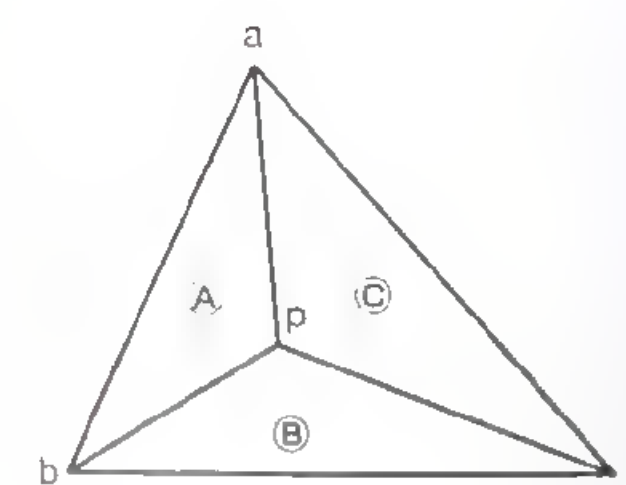
Here, I've applied the polyhedron-shaped sleeve from p. 52 to give a spiked appearance to the whole design.

Wearing polyhedron shapes

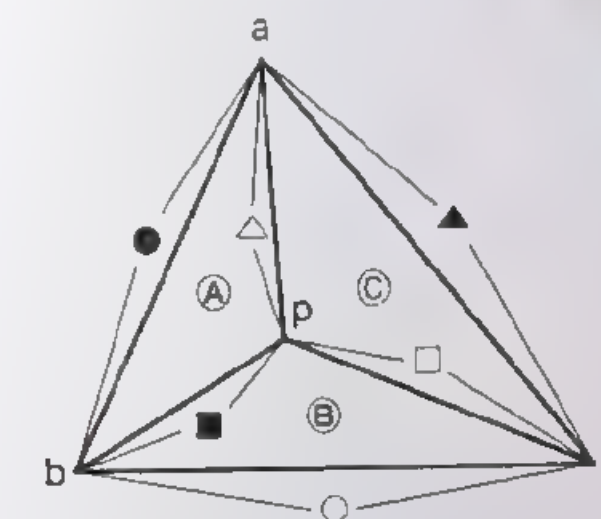
Carments composed of triangular shapes become three-dimensional. The protruding points formed by their surfaces make for a spiky effect.

Basic technique

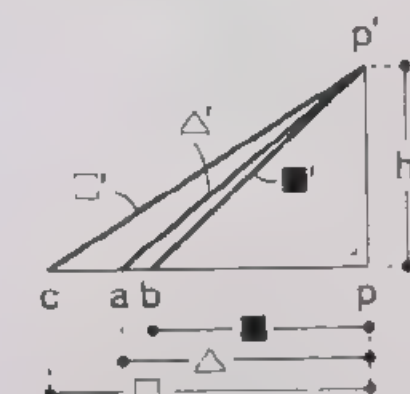
Start by making some triangular pyramids with paper and getting to grips with how they work. The triangles that form the bases of the pyramids will be flat, but since we are making clothing patterns, we must bear in mind that there are no flat surfaces anywhere on the human body. We therefore have to find the flattest places we can to place the bases.



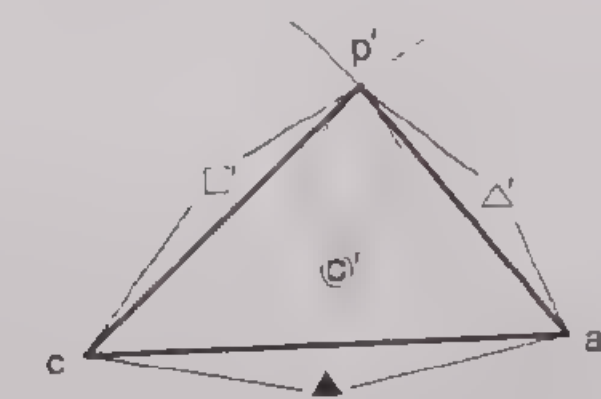
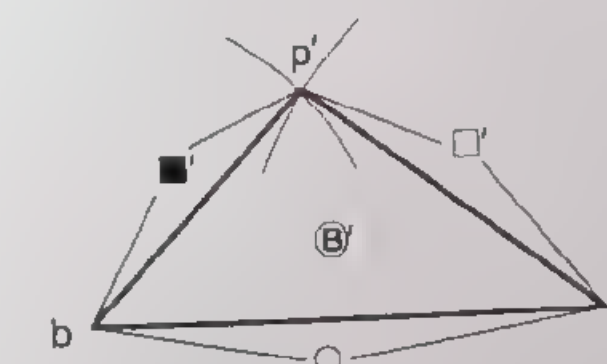
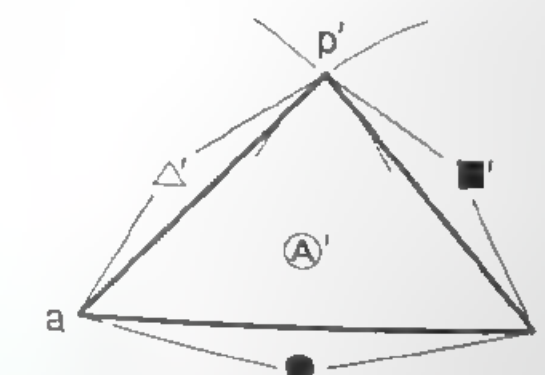
1 Draw a triangle with corners a, b, and c for the base. Decide where the tip will be and call it p. Divide into panels A, B, and C.



2 Call a to b measurement ●, b to c measurement ○, and a to c measurement ▲. Call p to a measurement △, p to b measurement ■, and p to c measurement □.



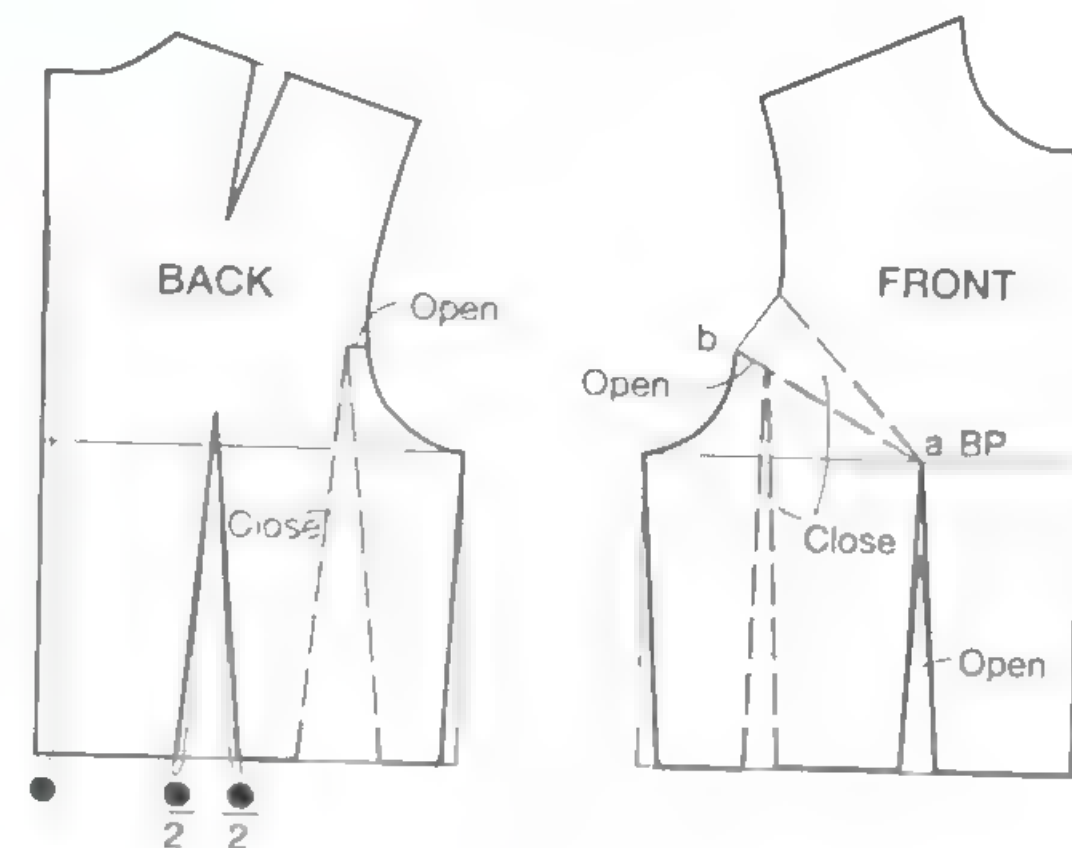
3 Call the height projected from p the distance h. Measure height h vertically from p and call the point p'. Mark out a, b, and c on the horizontal and connect them to p'. Measurements △, ■, and □ become △', ■', and □'.



4 Measure ● horizontally from a and mark b. With a pair of compasses, mark out measurements △' with pivotal point a, and ■' with pivotal point b, and name their intersection p'. The triangle p'ab will be panel A'. Mark out B' and C' in the same way. When you join A', B', and C', the points p in the triangle abc form p', creating a triangular pyramid of height h with a spiked tip.

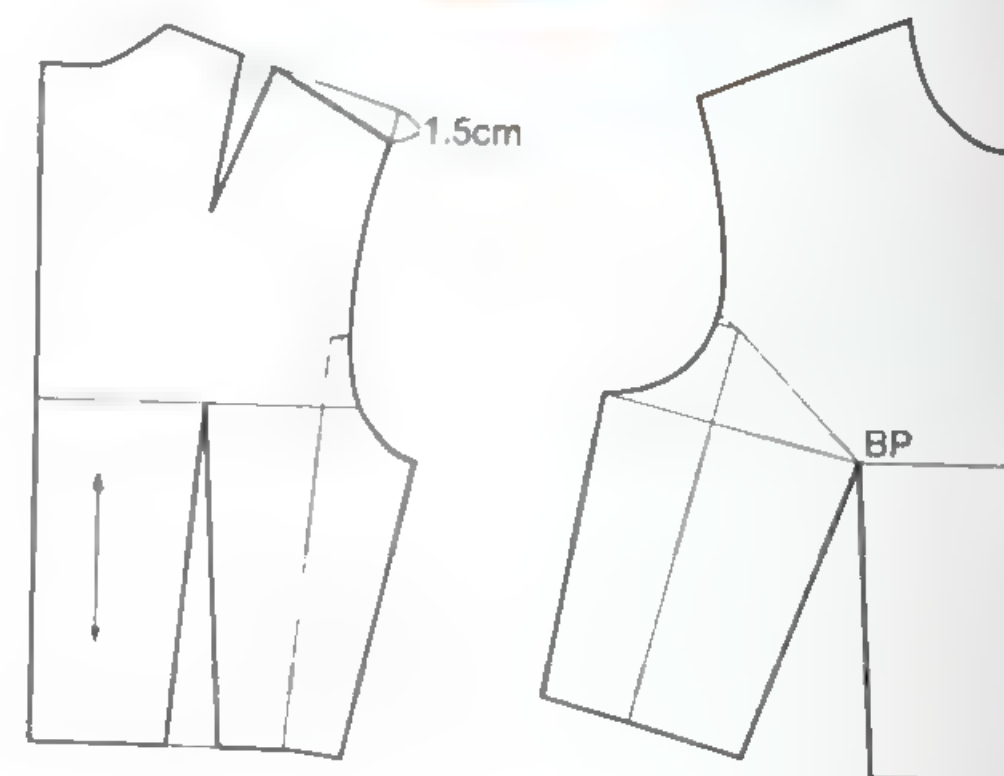
Polyhedron-shaped front bodice

In this design, we will make the front bodice of the sloper (block) in polyhedron shapes. It looks like a beautiful *objet d'art*.



1 Move the darts as indicated.

2 Move the darts as explained on page 24. Mark a and b.

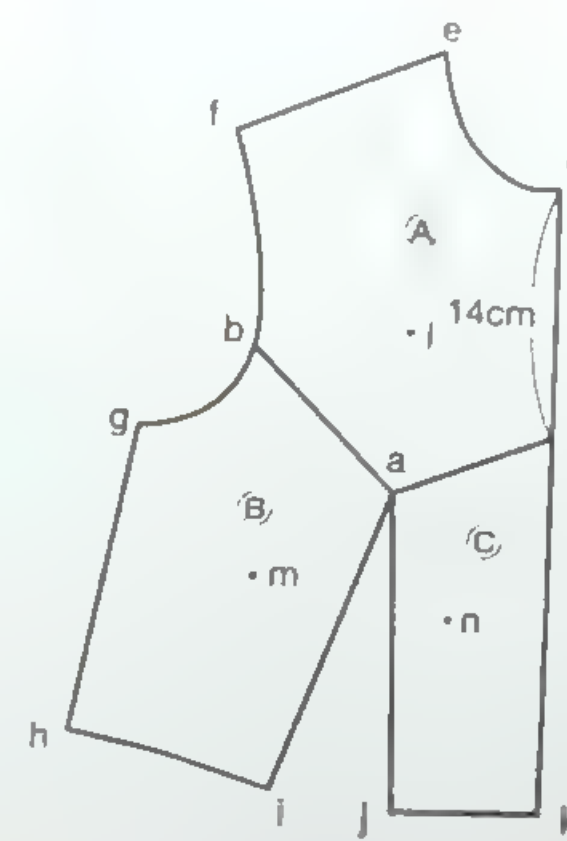


3 Trim the shoulder tip on the back.

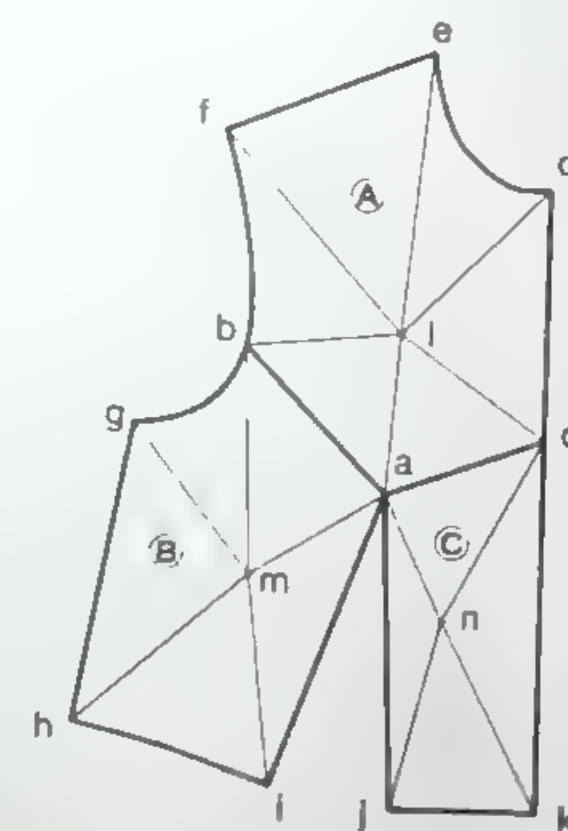
4 The front is opened out from a pivot at the bust point (BP).



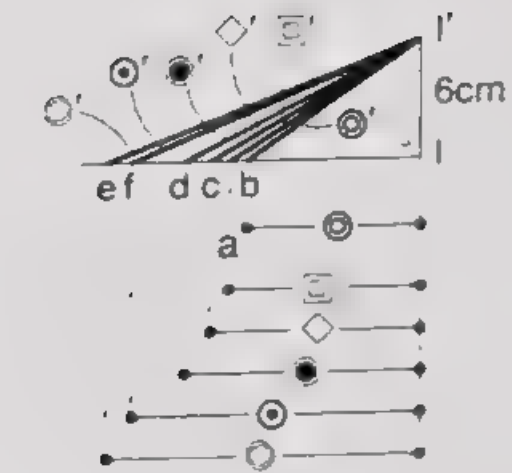
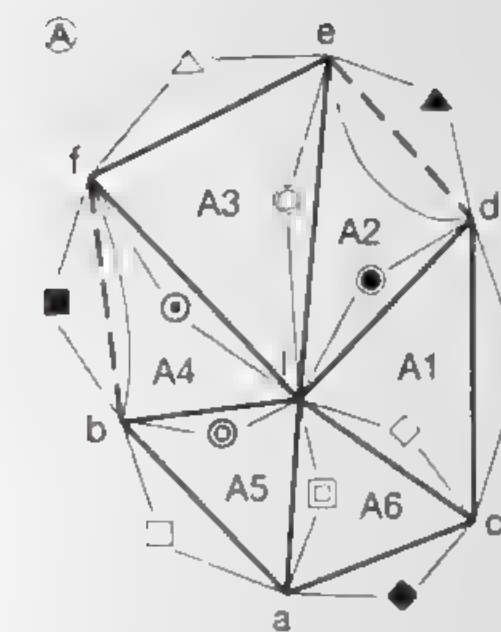
5 Place the sloper (block) on the dress form. Divide into three panels through the BP. In order to ensure that the panels forming the bases when the pattern is divided up are as flat as possible, I made the parting line of the armhole go through point b, and made the waist at the position of the darts on the sloper (block). Consider the balance of the piece when you decide where the centre front will go, and also when you decide where the points that form the tips of the pyramids will go.



6 Trace the pattern, add the parting lines and divide into panels (A), (B), and (C). Mark c, d, e, f, g, h, i, j, and k. Mark points l, m, and n.

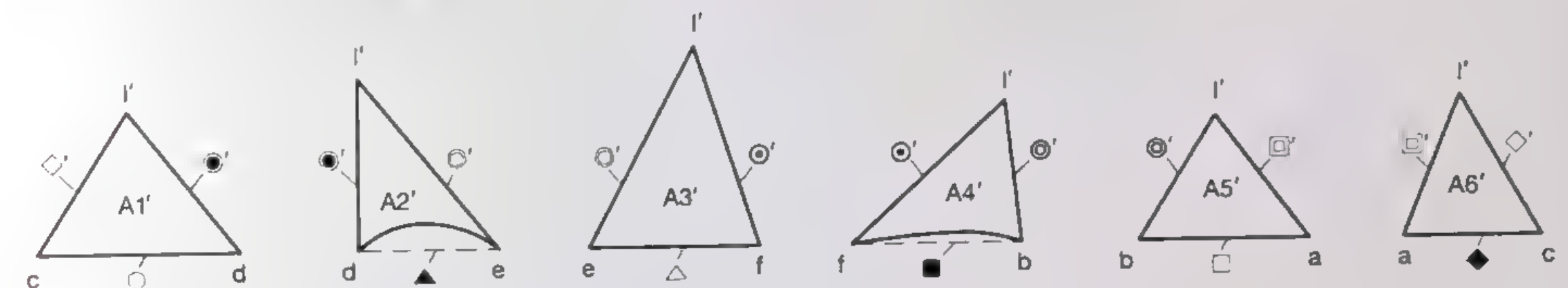


7 Add parting lines from points l, m, and n.

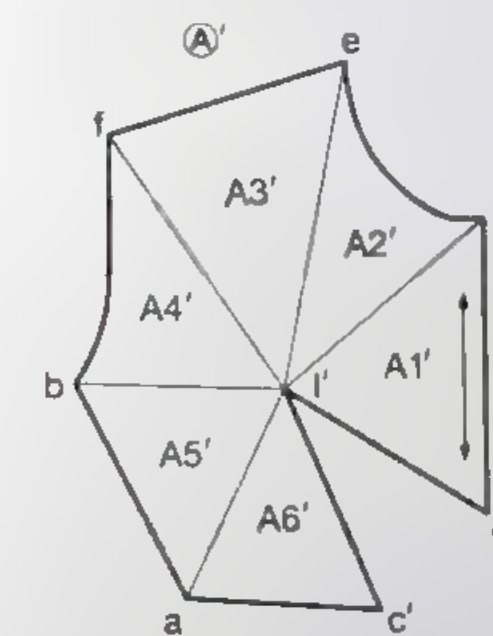


8 Make panel (A) a protruding pattern with point l as its tip. Mark the segmented faces A1 through A6. Draw a straight line connecting the neckline e to d and call that distance ▲. Also draw a straight line connecting the armhole b to f and call that measurement ■. Call the other measurements ○, △, □, ◆, ◇, ●, ◎, ⊙, ⊖, and ⊗.

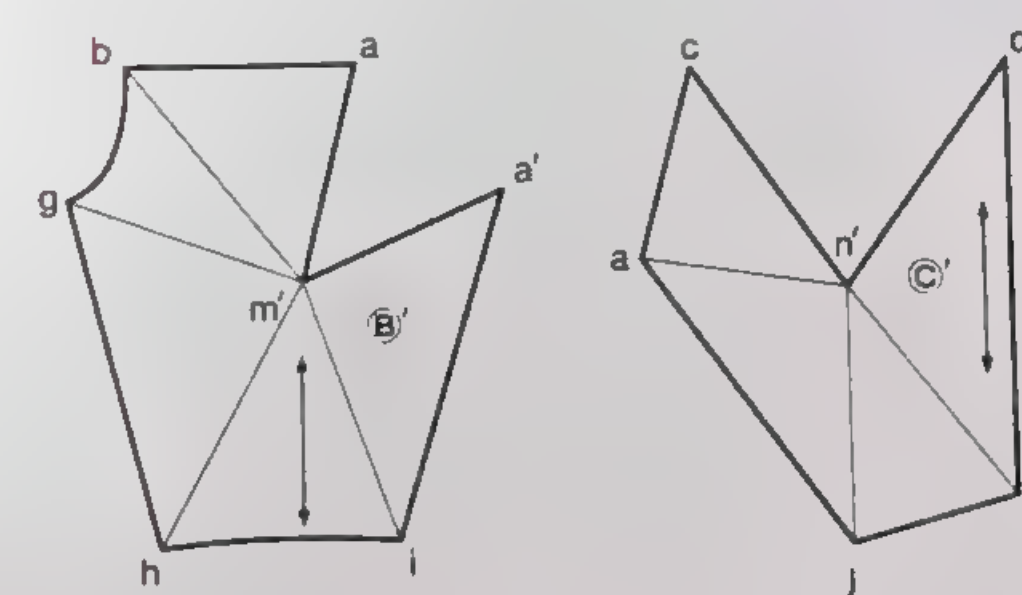
9 Draw a perpendicular with pivotal point l. The height of the point will be 6cm, so measure 6cm vertically from l, and call the point l'. Measure the distance ◎ horizontally from l and connect that point to l'. Call the distance l' to b measurement ⊙. Determine ◇', ●', ◎', ⊙', and ⊗' in the same way.



10 Manipulate the pattern for A1. Measure the distance ○ from c and call the point d. With a pair of compasses, mark out measurements ◇' from c and ●' from d and call their intersection l'. Draw a triangle cdl'. A1 changes to A1', forming a protruding pattern. Manipulate the other patterns in the same way, marking out the triangles A2', A3', A4', A5', and A6'. On A2', copy the neckline curve from d to e. On A4', copy the armhole curve from f to b.



11 Align the patterns you made in 10 at l'.



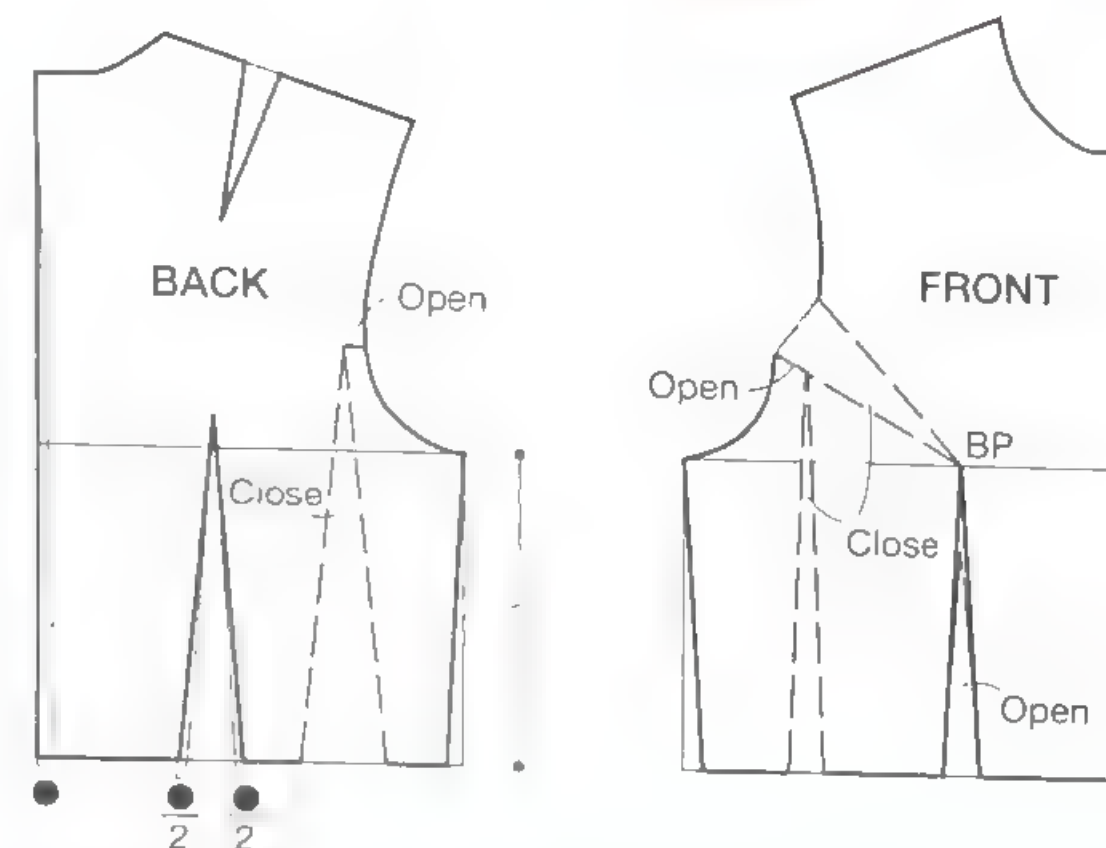
12 Make panels (B) and (C) into protruding patterns in the same way. These will become (B') and (C').



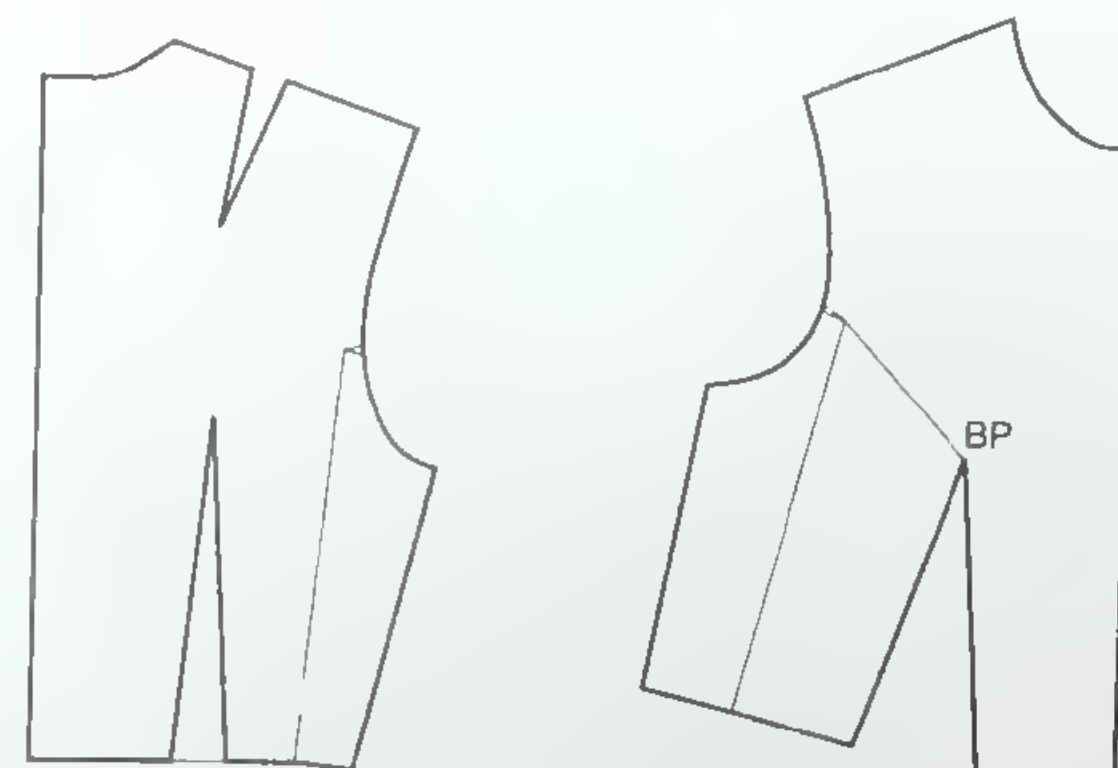
13 Assemble and place on the dress form.

Sleeve with polyhedrons

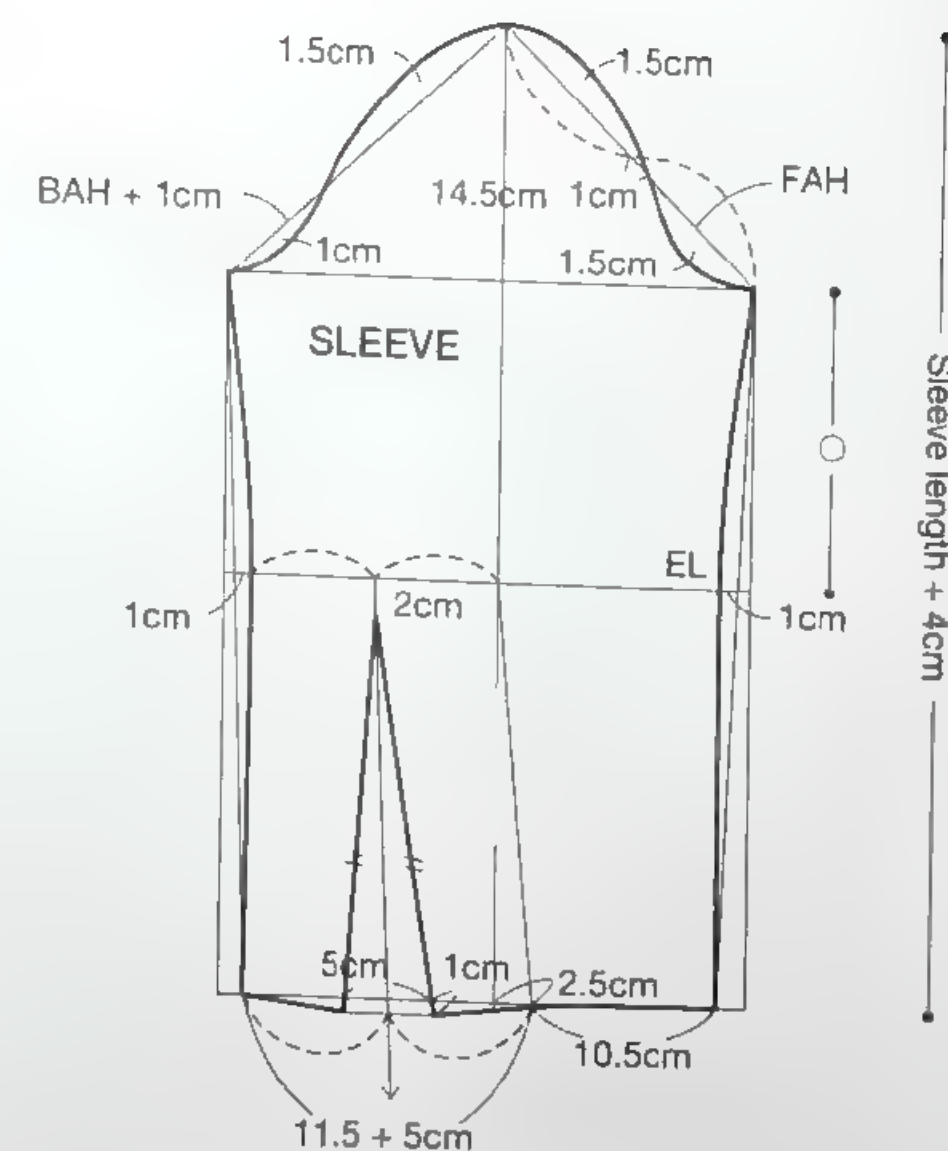
Let's try creating a spiked area going from the sleeve cap to the shoulder tip. The spikes look like quartz crystals.



1 Move the darts by closing the existing darts and opening up the pattern as indicated



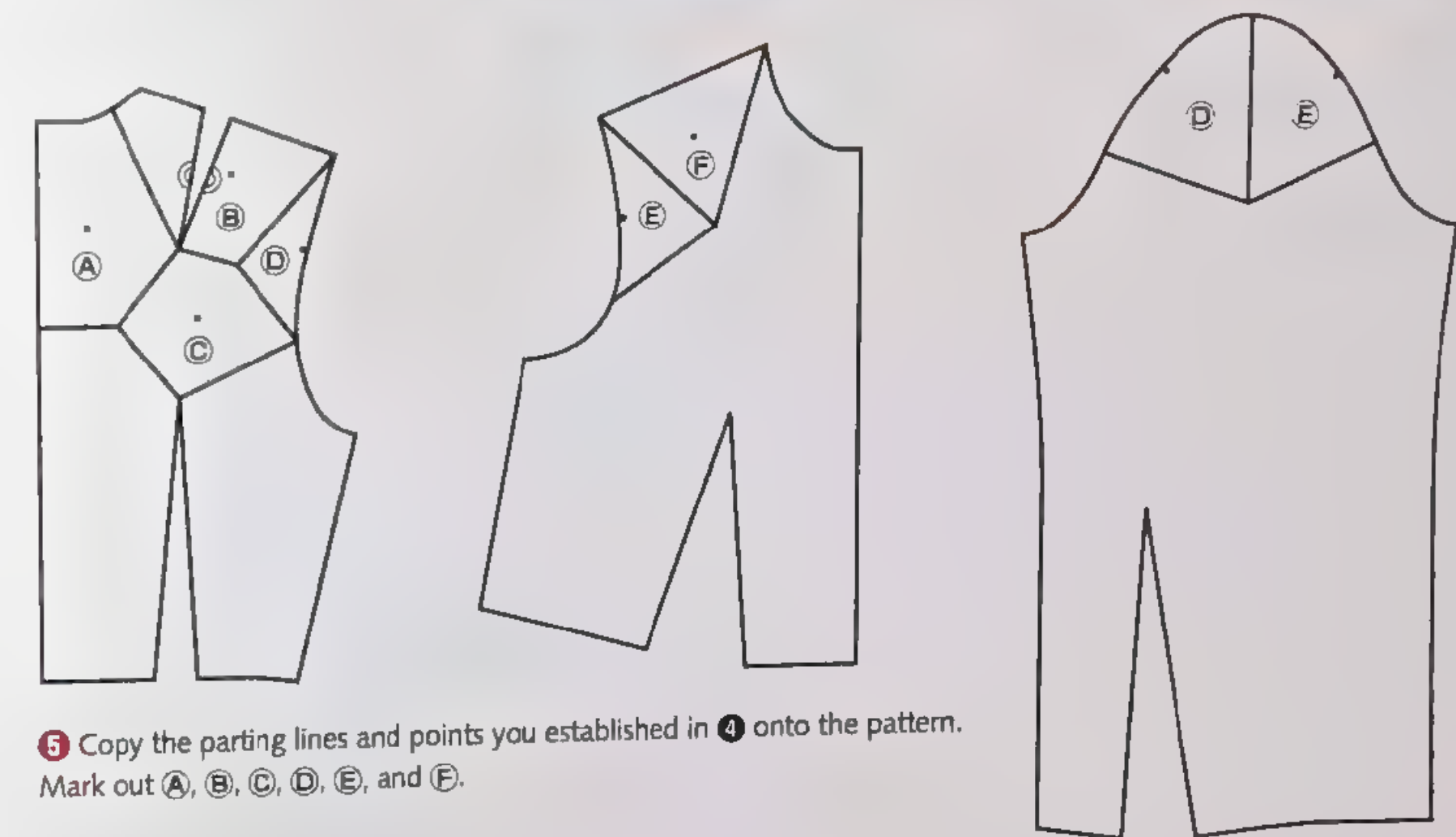
2 The back and front with darts closed



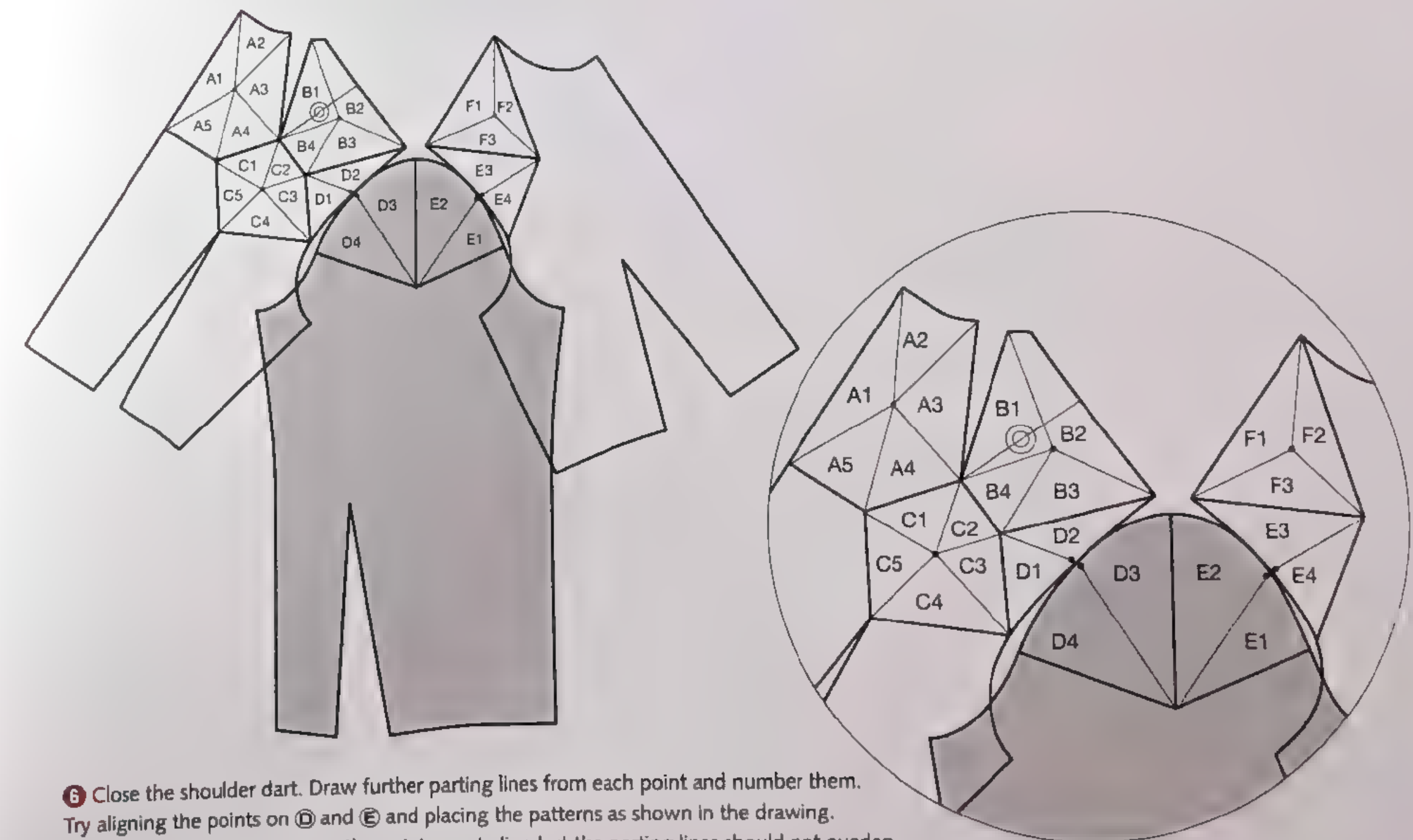
3 Draft the pattern for the sleeve.

4 Assemble as a toile (muslin) and place on the dress form. We will be adding the parting lines with tape, but bear in mind the following points in order to ensure that the panels forming the bases are as flat as possible when the pattern is divided up.

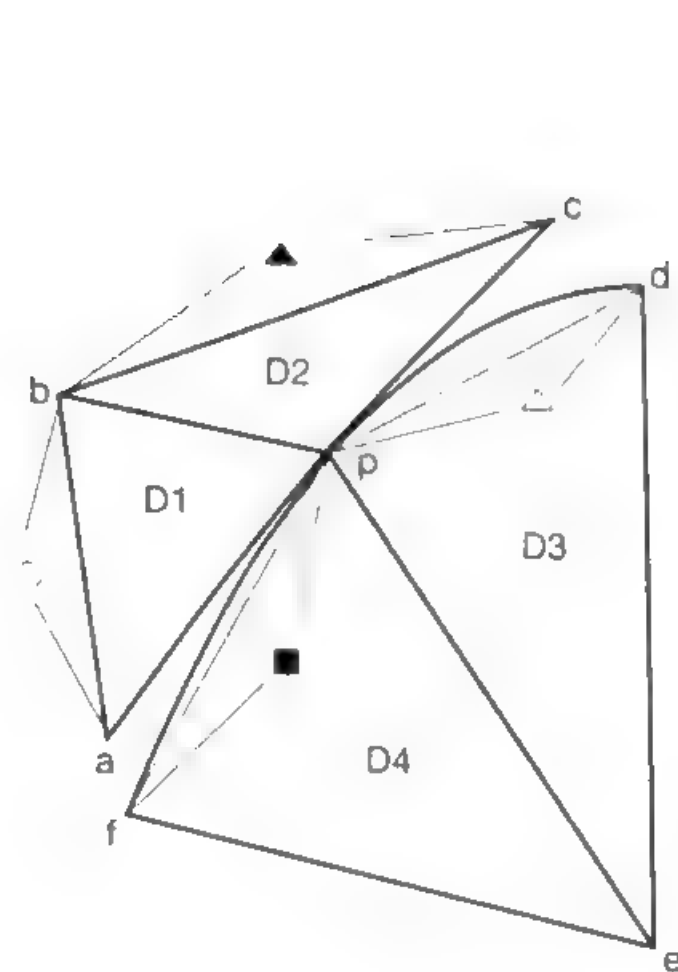
- Ensure that when the pattern is divided up the resulting panels do not straddle the shoulder.
- Ensure that the parting lines of panels A, B, and C meet at the shoulder dart end.
- Do not divide the panels at the armhole.
- Locate the points of panels D and E on the sleeve setting lines.



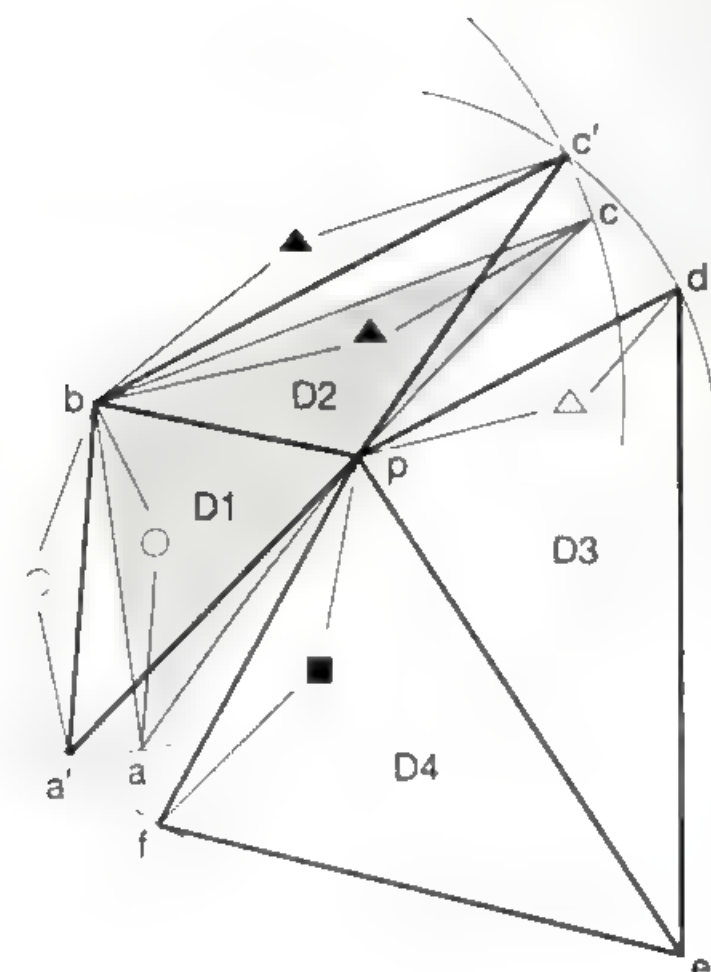
5 Copy the parting lines and points you established in 4 onto the pattern. Mark out A, B, C, D, E, and F.



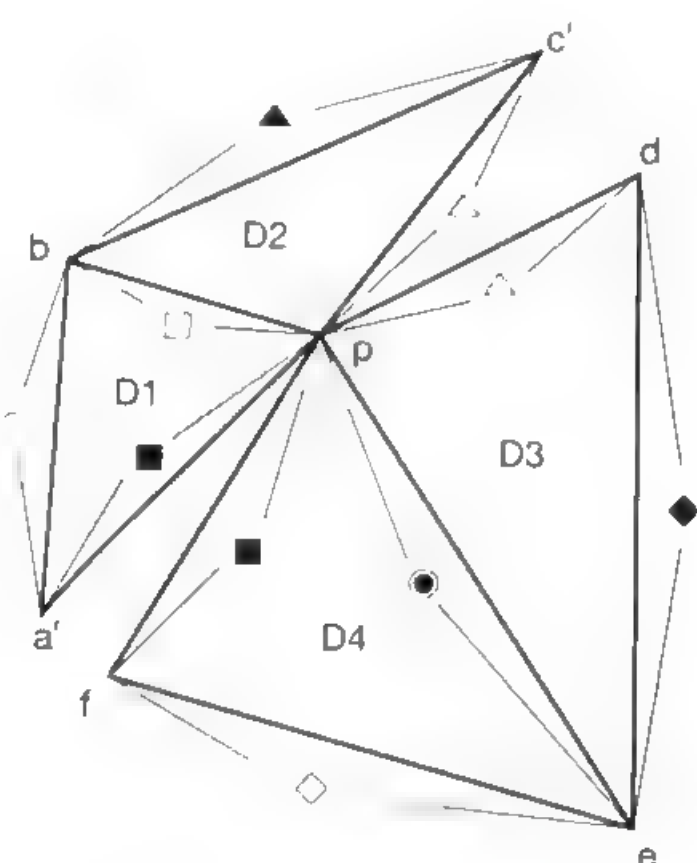
6 Close the shoulder dart. Draw further parting lines from each point and number them. Try aligning the points on D and E and placing the patterns as shown in the drawing. *When you place the patterns, the points must align but the parting lines should not overlap.



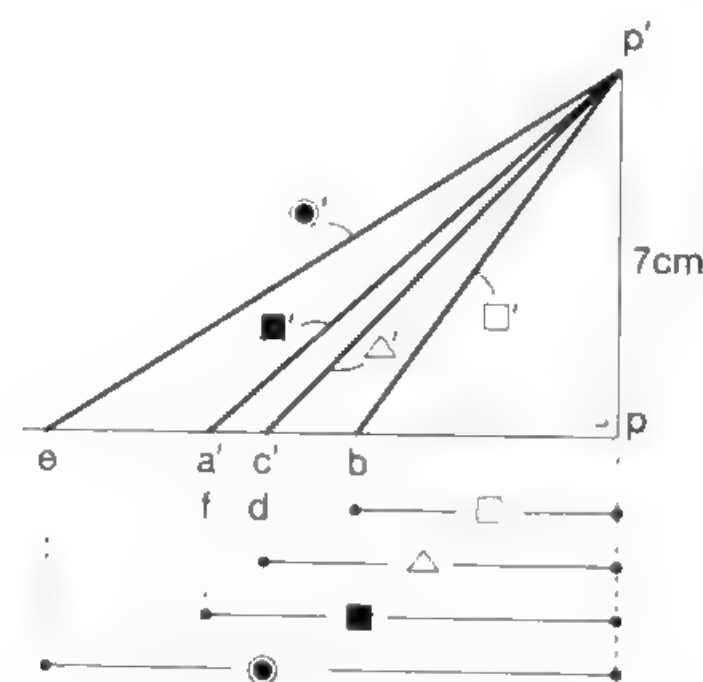
7 Make \odot into a protruding pattern. Call the point p. Mark a, b, c, d, e, and f. Draw straight lines connecting p to d and p to f. Call the distance from p to d measurement \triangle . Call the other measurements \blacksquare , \blacktriangle , and \circ .



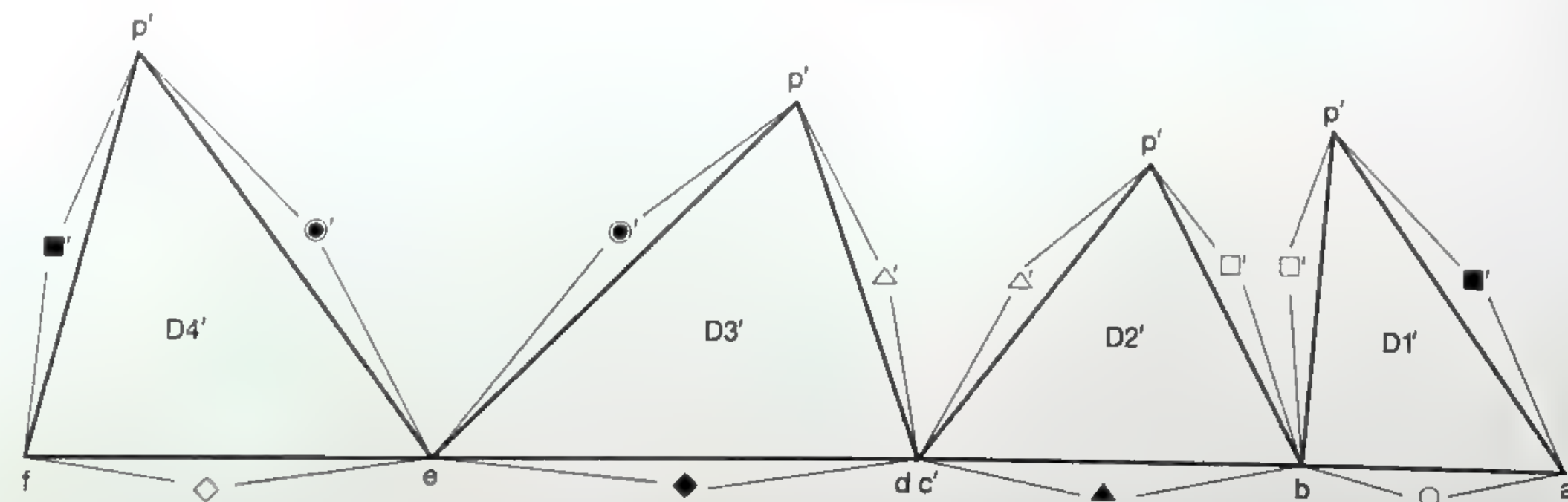
8 There is ease in the sleeve cap between p to d and p to c, and p to f and p to a, so they will not be the same length. Manipulate the patterns for D1 and D2 so that they are the same length. With a pair of compasses, mark out measurements \triangle from p and \blacktriangle from b. Call their intersection c'. Determine a' in the same way.



9 Call the distance from p to b measurement \square . Call the p to e measurement \odot , d to e measurement \blacklozenge , and f to e measurement \diamond .

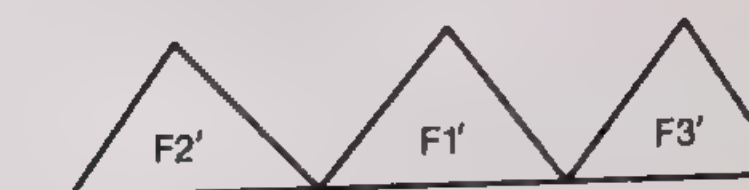
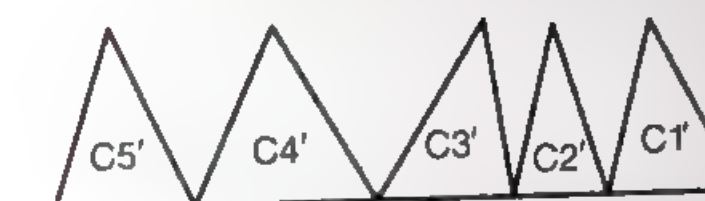
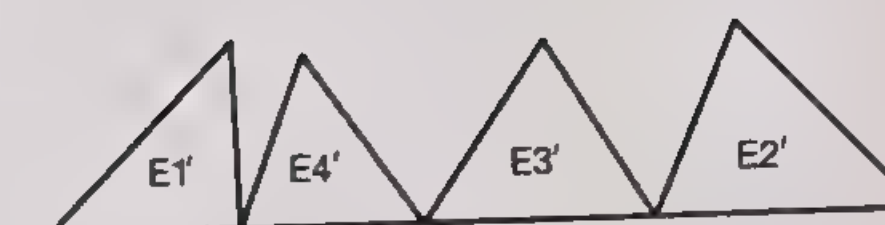
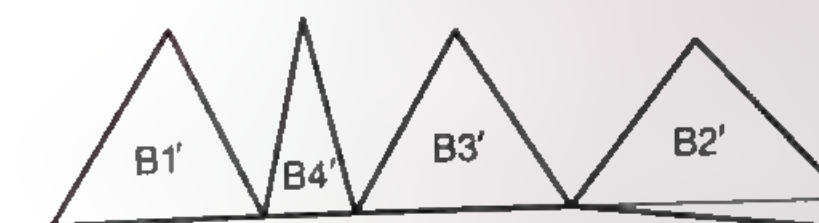
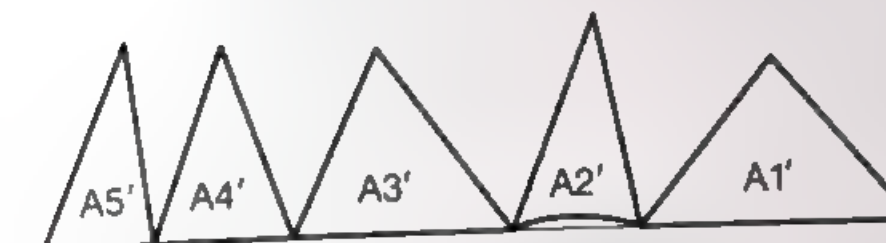


10 The height of the point will be 7cm, so mark a point 7cm vertically from p and call it p'. Mark point b horizontally \square from p, connect p' and b, and determine measurement \square' . Determine measurements \triangle' , \blacksquare' , and \odot' in the same way.

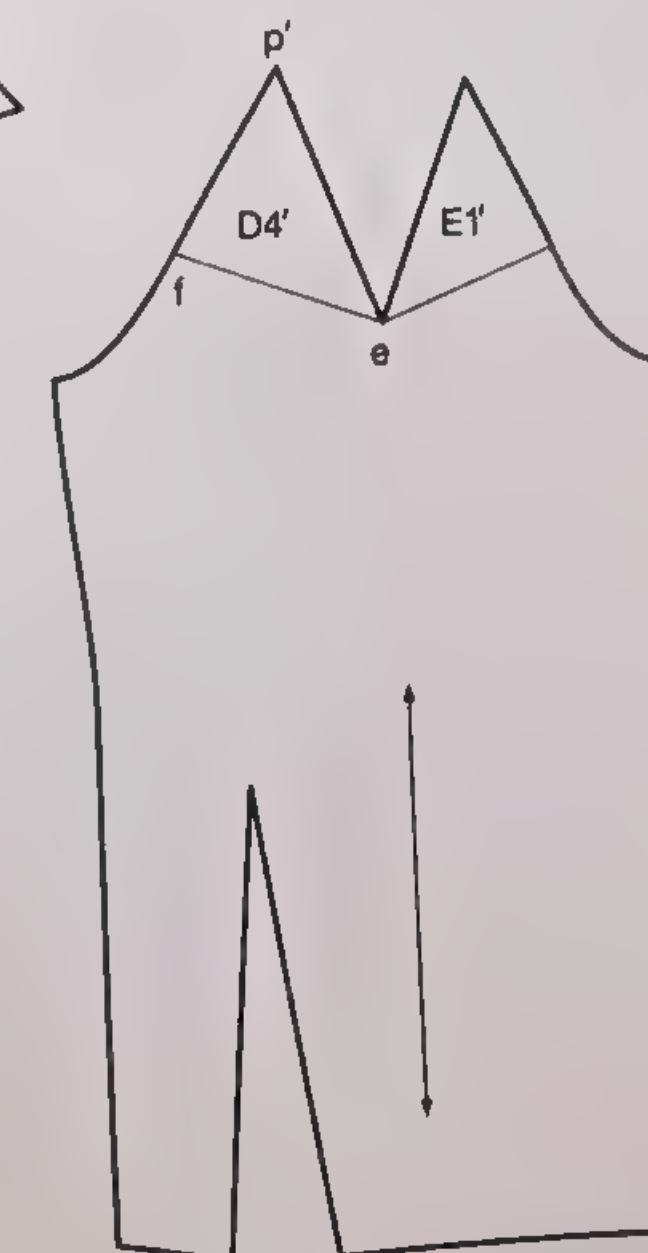
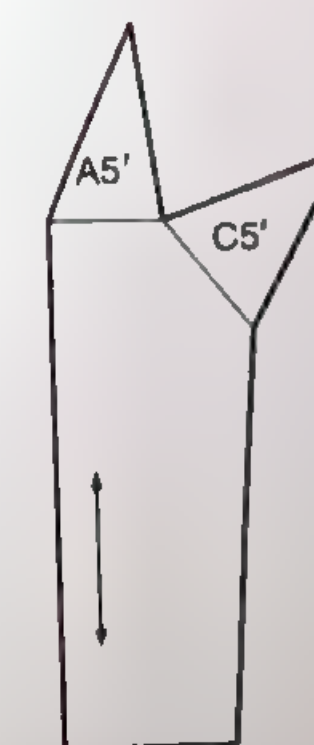
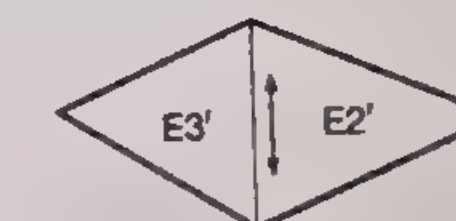
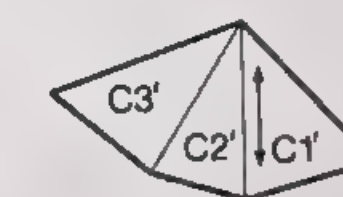
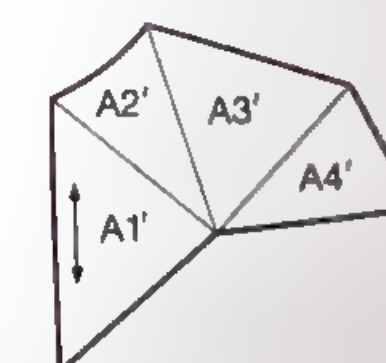
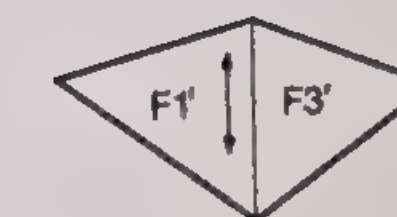
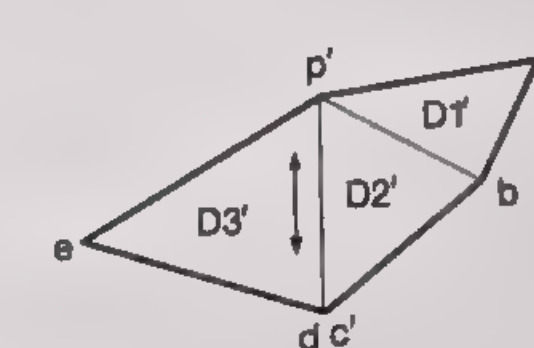
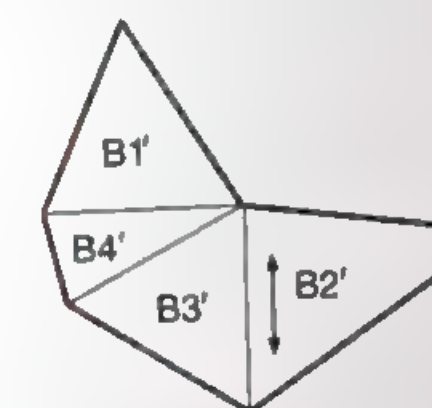


11 Measure a point \diamond from f and call it e. With a pair of compasses, mark measurements \blacksquare' from f and \odot' from e, and call their intersection p'. Draw a triangle p'fe. D4 becomes D4'. Manipulate the other patterns in the same way to mark out triangles D3', D2', and D1'. Panel \odot has become patterns D4', D3', D2', and D1'.

Tips of the spikes



12 Manipulate (A), (B), (C), (E), and (F) in the same way and make the patterns.



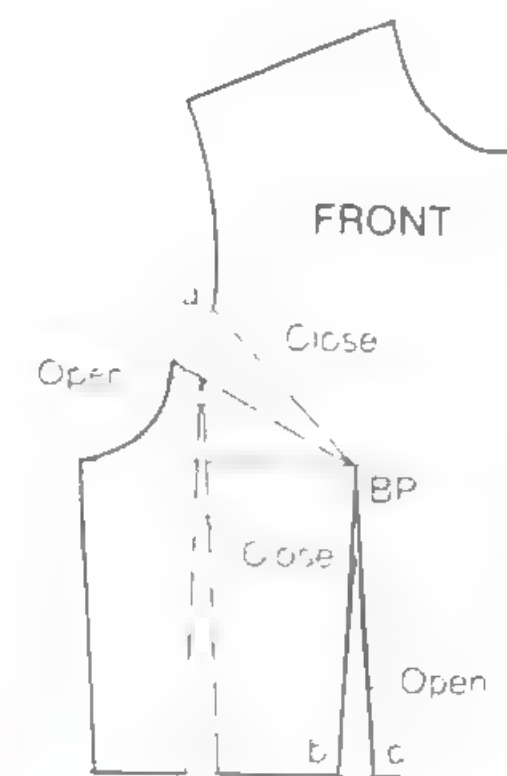
13 Connect the patterns. Join A5', C5', C4', D4', E1', E4', and F2' to the sleeve and bodice.

Outlining a surface

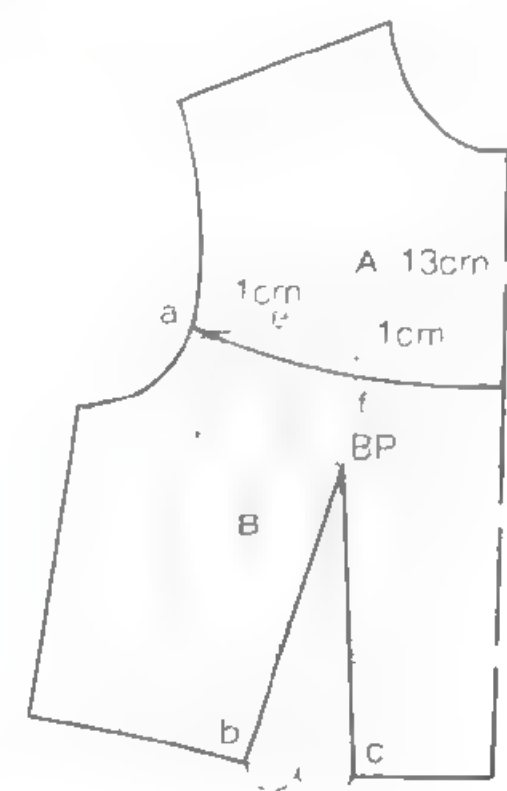
If you divide the pattern in two and draw your favourite shape or a flat surface on one half, the other half can be cut to open out in tandem with it

Trace an arc across the bust

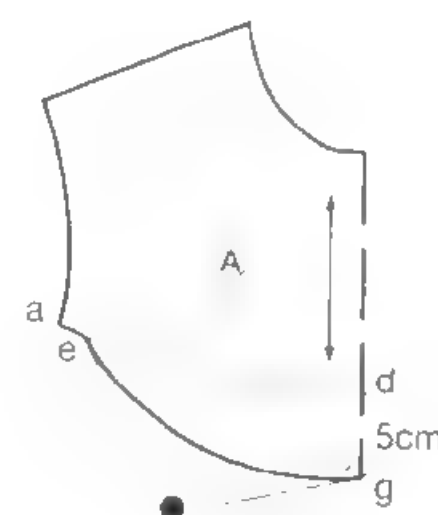
The fullness of the bust fits snugly into the arc, producing a crisp silhouette.



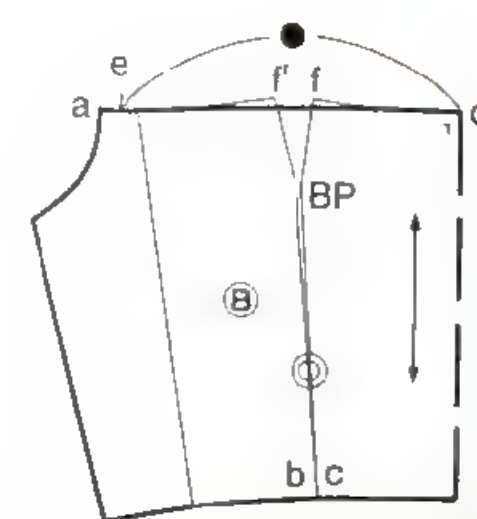
1 Move the darts as explained on page 24. Mark a and b.



2 Measure d on the centre front line. Draw a curve connecting a to d. Mark e on the curve. Divide b to c into two equal sections, and then draw a line passing through the bust point (BP) and extending onto curve a to d. Mark f at the intersection. Divide into panels A and B.



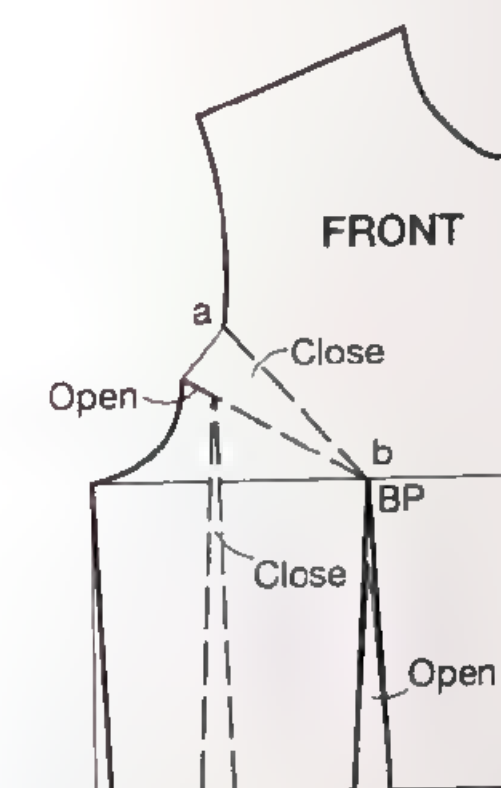
3 On panel A, trace an arc from point e to the centre front line. On the line 5cm directly down from d, mark g. Draw an arc from e towards g. Call the e to g measurement ●.



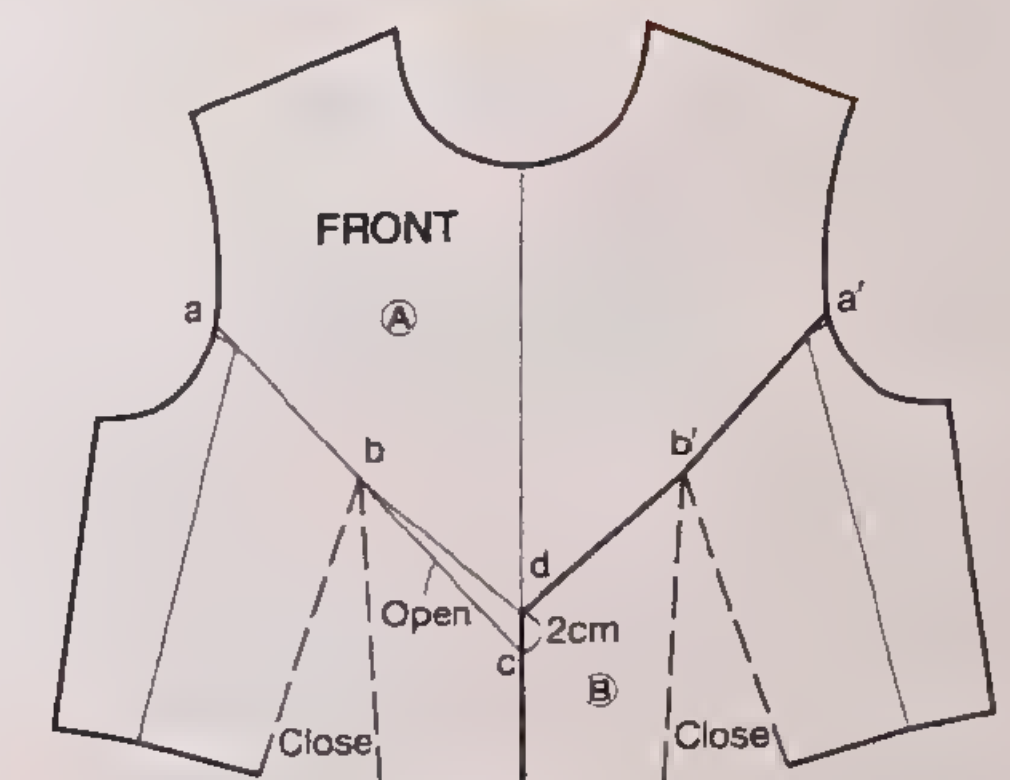
4 On panel B align b and c, and open out at the top until the distance from e to d is ●. Connect e to d smoothly and continuously. If ● is too short, the pattern will overlap at the BP and there will be insufficient width across the bust when the pattern is opened out at e to d. If this happens, make the arc from e to d on A bigger.

Outline a surface with a small projection at the centre front

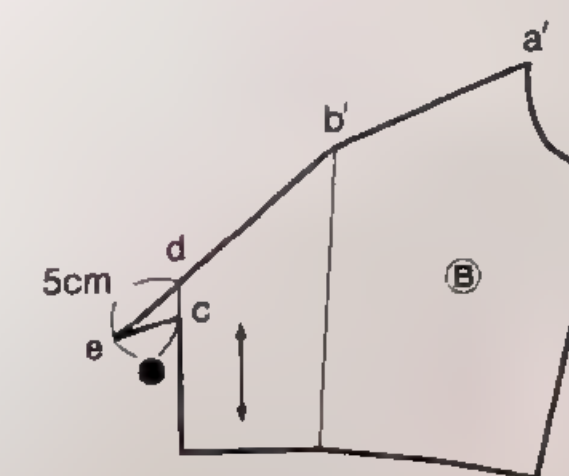
This turned out to be a humorous piece with a small projection like a bird's beak.



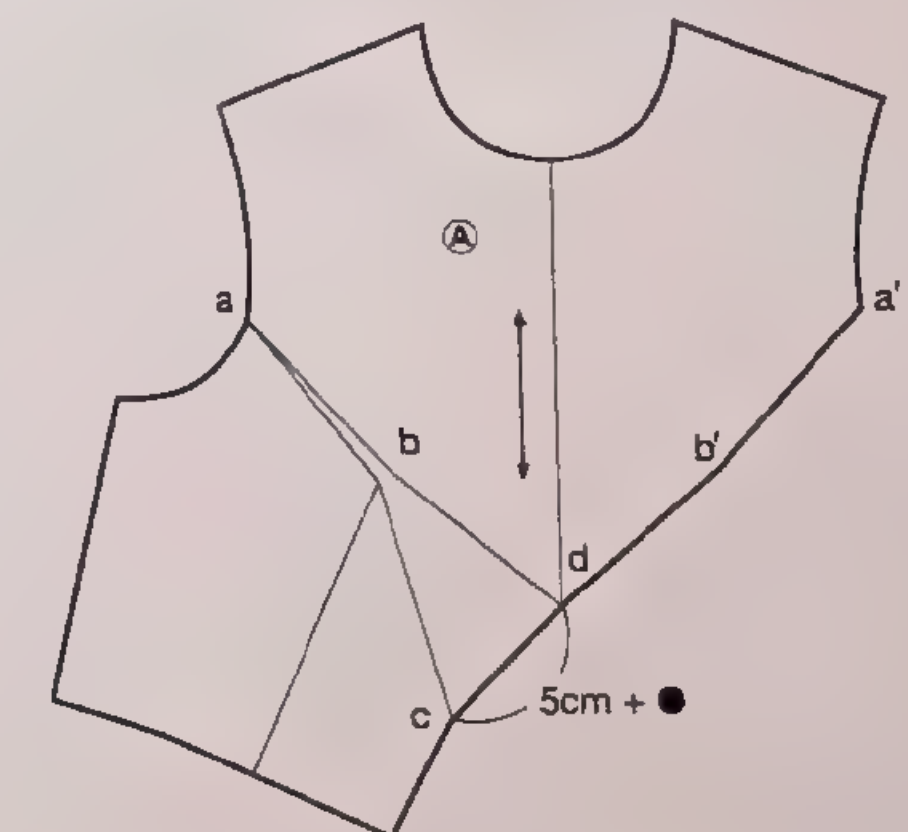
1 Move the darts as explained on page 24. Mark a and b.



2 Draw a reflection of 1 to draft a pattern for the complete front bodice. Mark a' and b'. Extending the line a to b, mark c on the centre front line. On the line 2cm directly up from c, mark d. Divide into panels A and B.



3 Measure 5cm on the extension line from b' to d and mark the point e. Connect e to c. Call the e to c measurement ●.



4 With a as the pivotal point, open out until the distance from d to c is 5cm + measurement ●. Connect d to c.

Look at dynamic movement in fabrics

This design takes us back to ancient Rome, when people were still wearing togas, which simply meant wrapping a piece of fabric around themselves. Apparently, the night before addressing an audience, an emperor would stand in front of the mirror checking and rechecking the volume and hang of the pleats in his toga. It is fascinating to think that the things the emperors wore had as much power to express their authority and to rouse the people as what they actually said in their speeches.



Full-bodied ruffle Instructions p. 67



Wearing a bag Instructions p. 74



Wearing a bag Instructions p. 78 (left) and p. 80 (right)



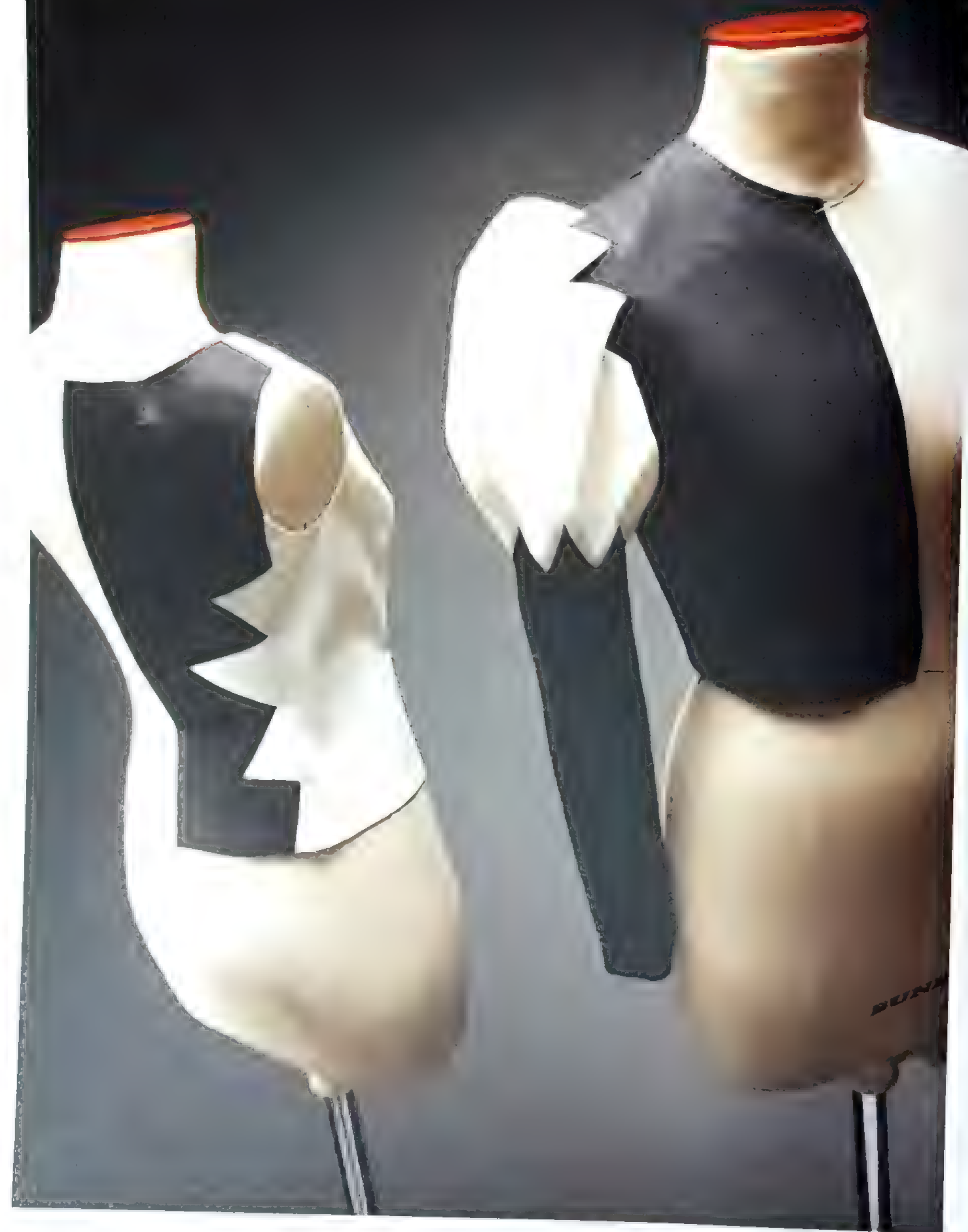
Elastic shirring Instructions p. 85



Serrated lines Instructions p. 89



Serrated lines Instructions p. 92 (right) and p. 94 (left)



PATTERN MAGIC

Make the patterns

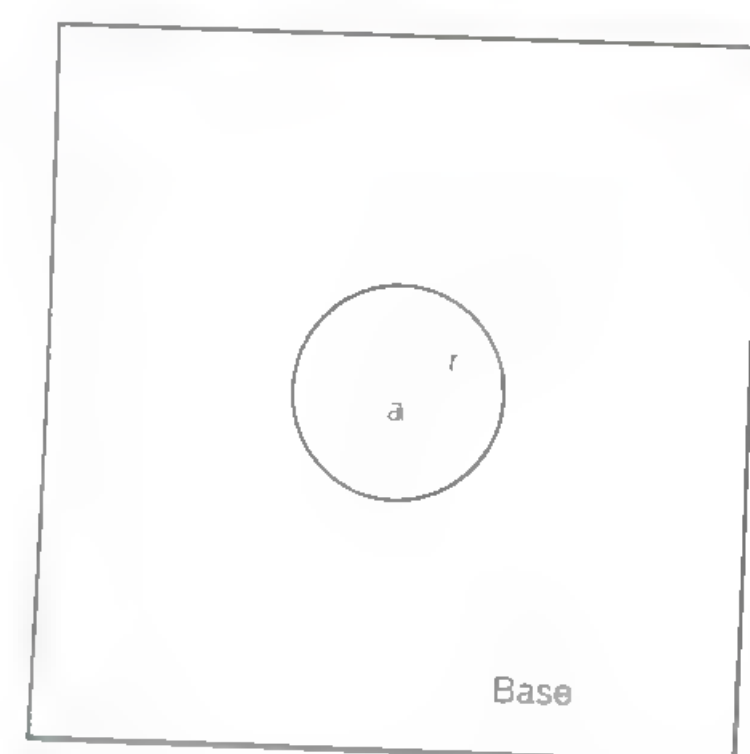
I hope the pattern-making methods I introduce here are of use to you in turning an image into a silhouette or design detail, and that you'll learn from the ideas in this book and then find new methods that work for you.



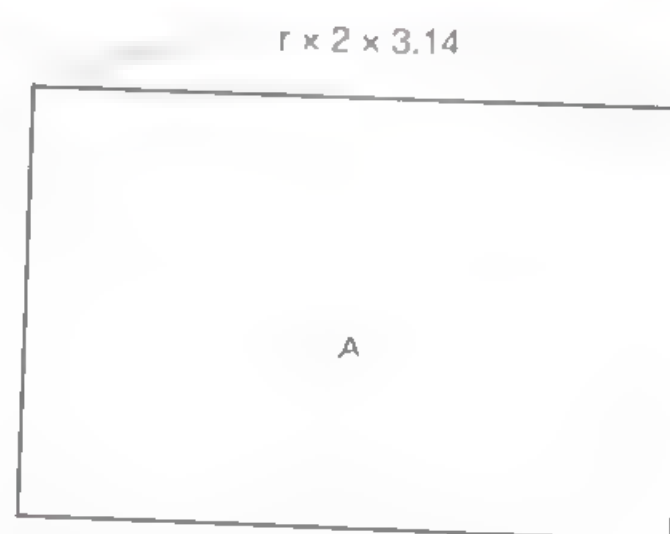
Full-bodied ruffle

Try cutting a cylinder shape straight across its width. The opening will form a clean circle. If we cut diagonally, the cylinder will lean to one side, and the opening will form an ellipse. The more we increase the slant and tilt the cylinder over, the more the ellipse of the opening is elongated. So what will happen to the pattern if we keep the opening the same size as the circle and adjust the tilt of the cylinder?

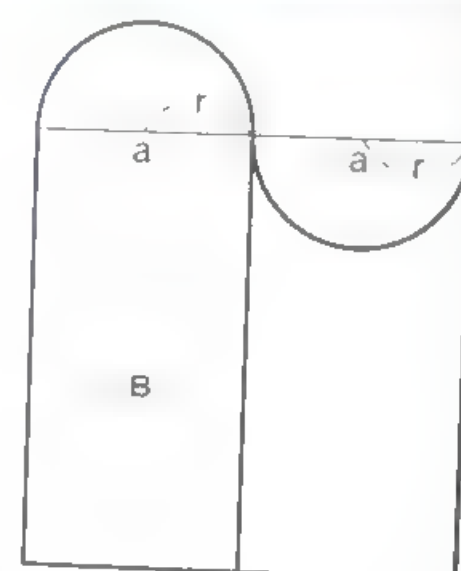
Basic technique



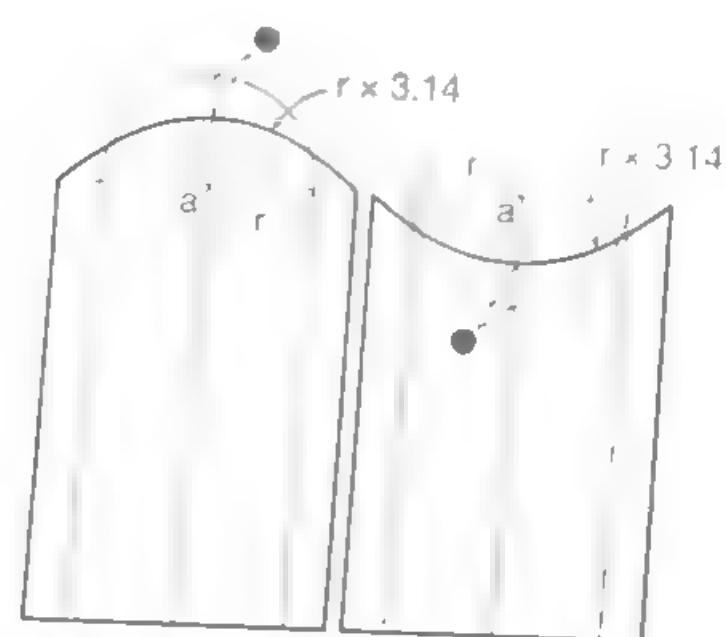
1 Draw a circle of radius r around point a on the base



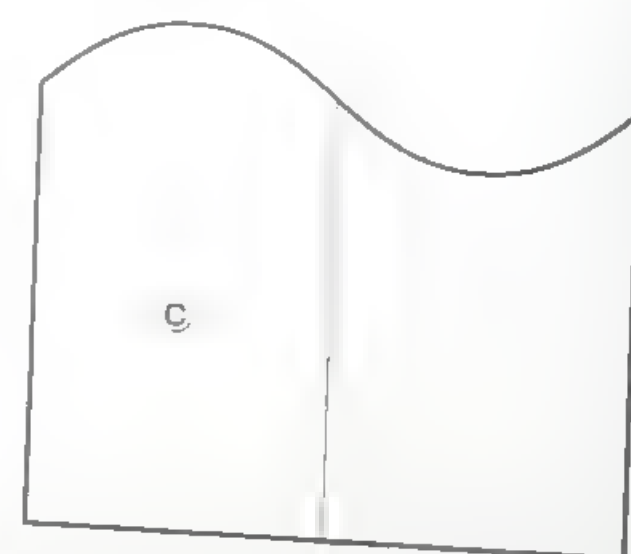
2 On panel A the cylinder is upright. This gives a rectangular pattern whose width is the circumference of circle radius r ($r \times 2 \times 3.14$).



3 On panel B, I kept the opening as a circle and tipped the cylinder over until it lay flat. The pattern forms a semi-circular mountain and valley



4 On panel C the length of the opening is left as it is (as the circumference) and the cylinder is tilted diagonally. When we tip the cylinder from the upright to the horizontal, the configuration changes from A to B. The pattern changes from a straight line to a semi-circle, like the phases of the moon, with the tilt becoming more emphasized as it nears the semi-circle. Make pattern C. Copy the pattern from 3 separated into a mountain and valley. Lower the mountain by measurement ●. The mountain will have a peak of height ($r - \bullet$) and length ($r \times 3.14$). Make the valley shallower by measurement ● in the same way. Draw the valley with a curve of length ($r \times 3.14$).

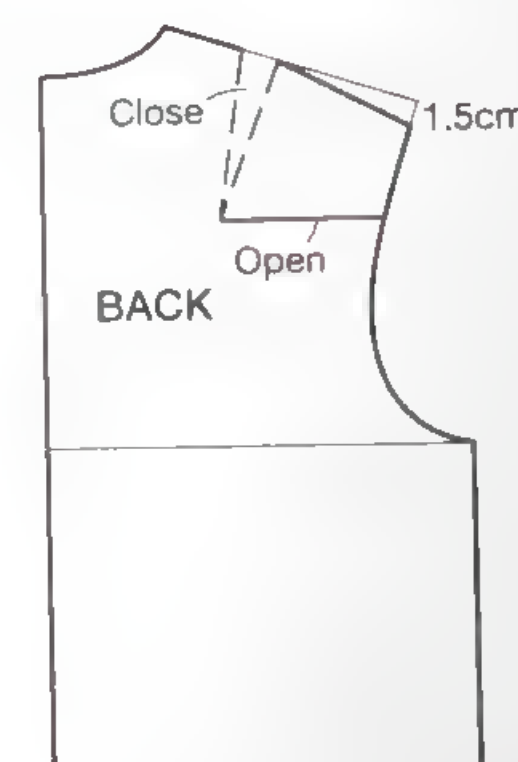


5 Join the mountain and valley parts to complete the pattern.

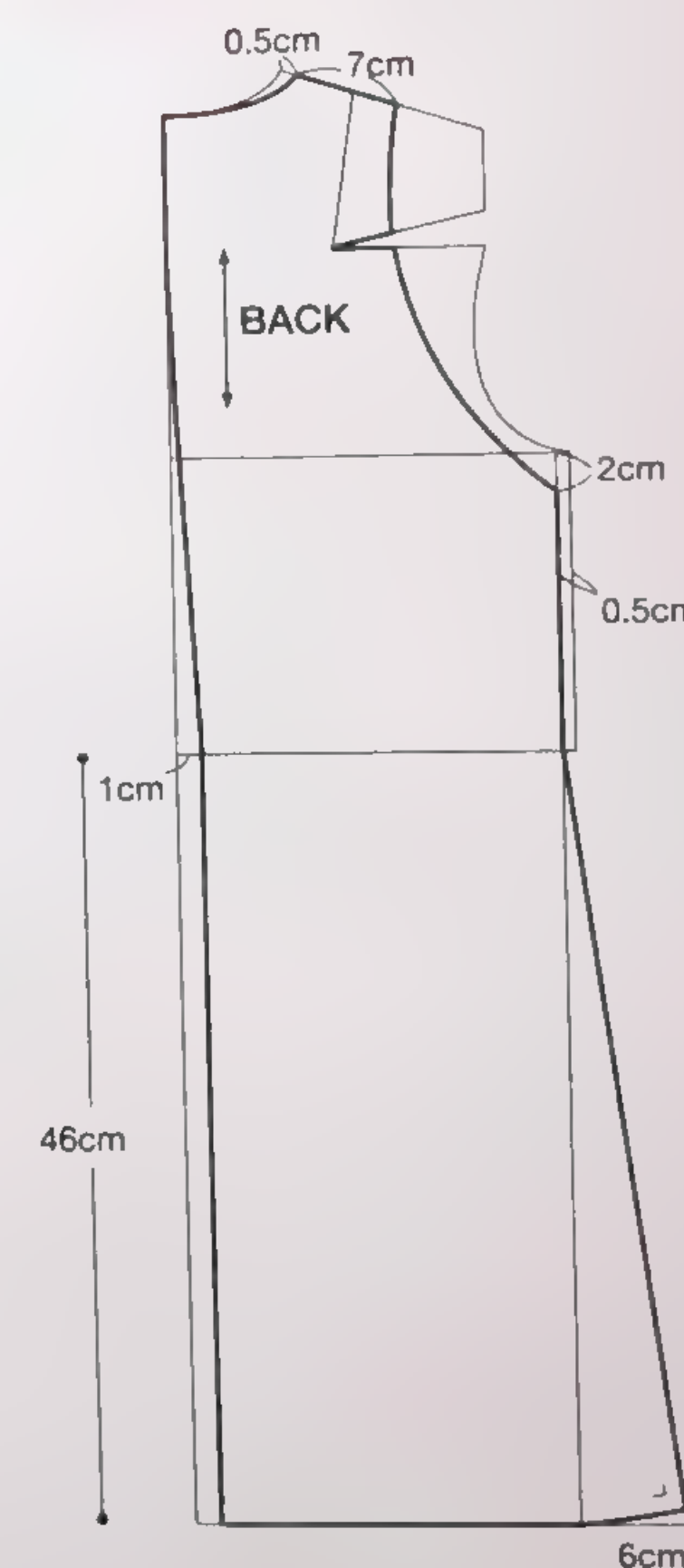
I made the pattern in miniature to find out the relationship between measurement ● and the angle of tilt of the cylinder, and it turned out to be as below. The angle of tilt was about 75° with ● as $3r/4$; 60° with ● as $r/2$; and 40° with ● as $r/4$.

Spiral

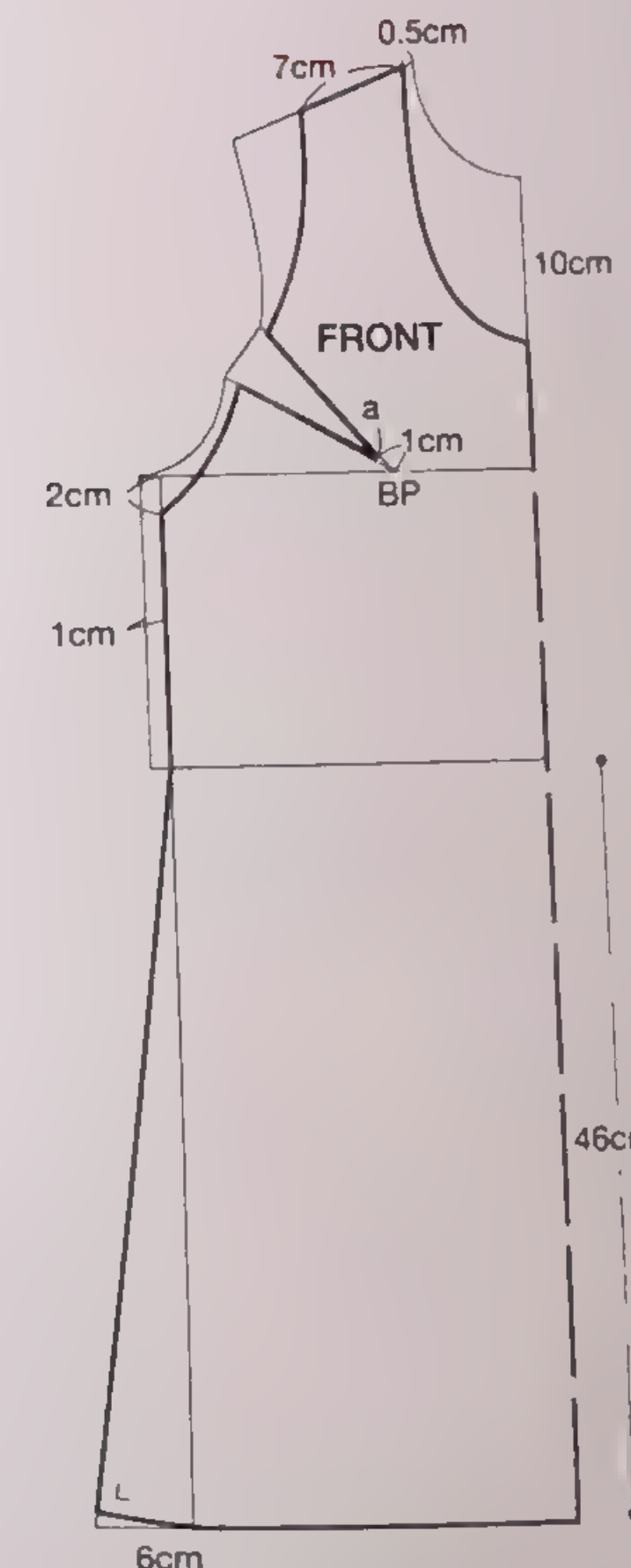
Let's try making a ruffle with a three-dimensional spiral shape tilted at an angle. This coiled ruffle looks as pretty as a flower. Designed by Fumie Nomura.



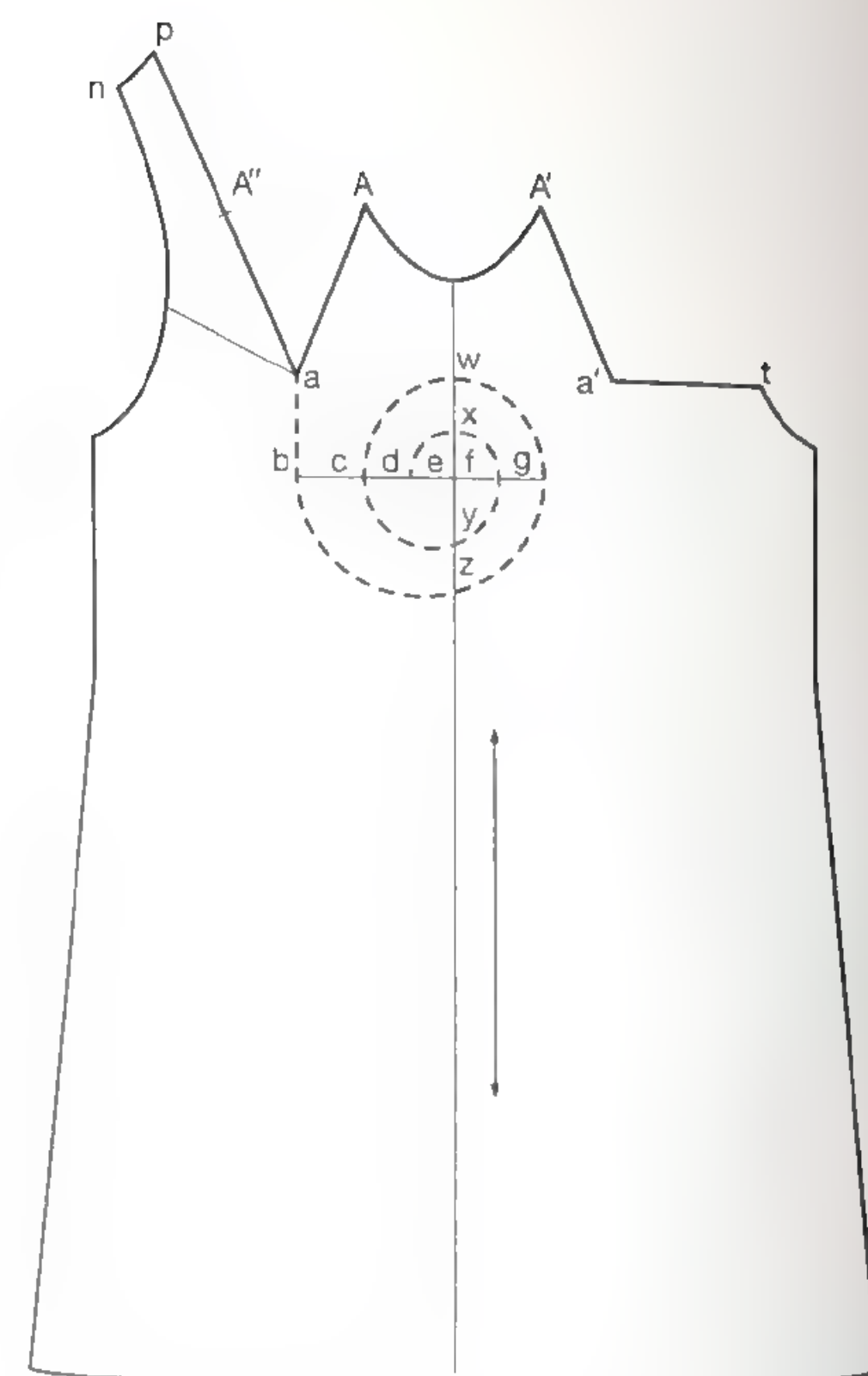
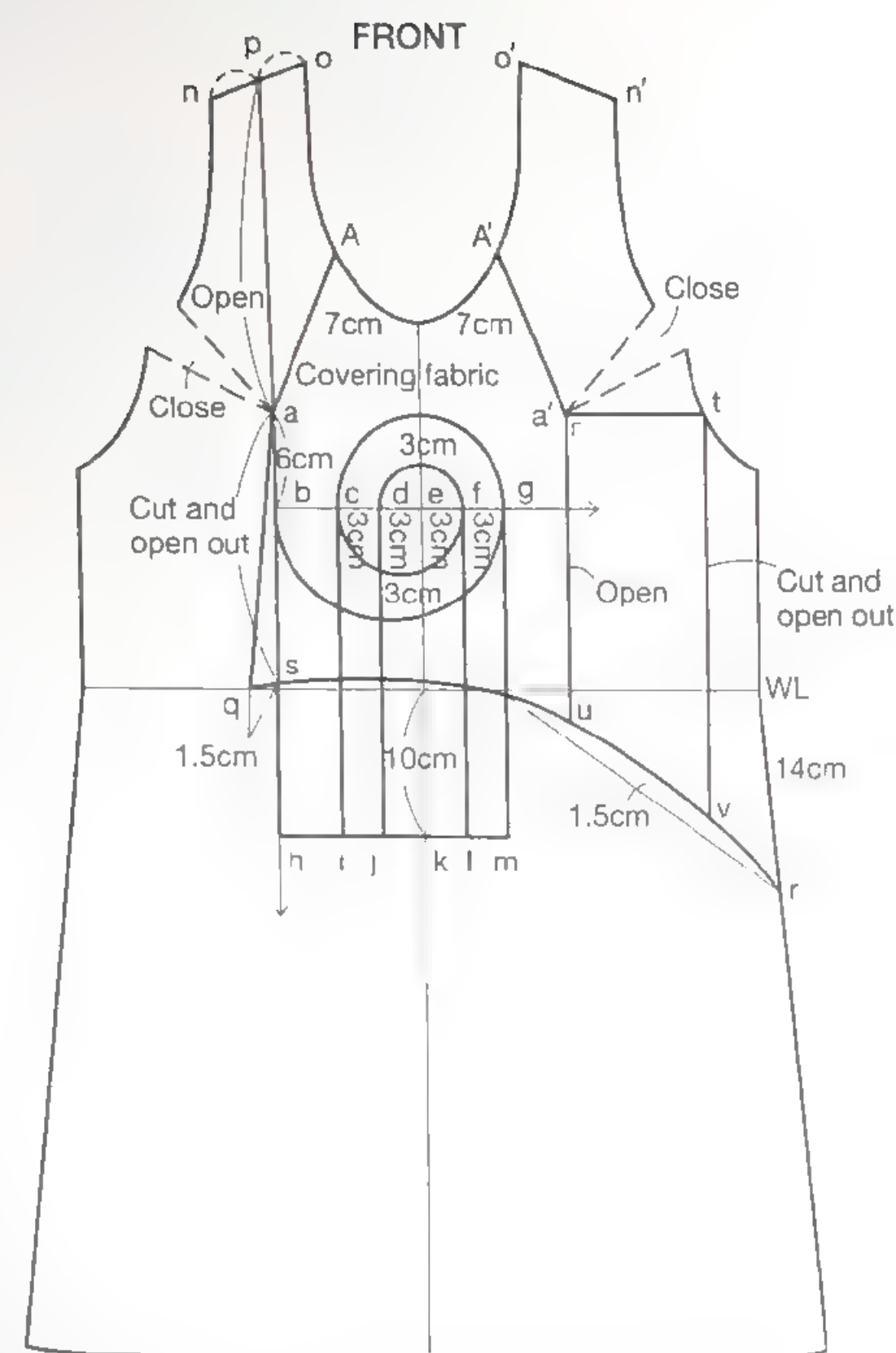
1 Move the shoulder dart to the armhole.



2 Draft the pattern for the back bodice.

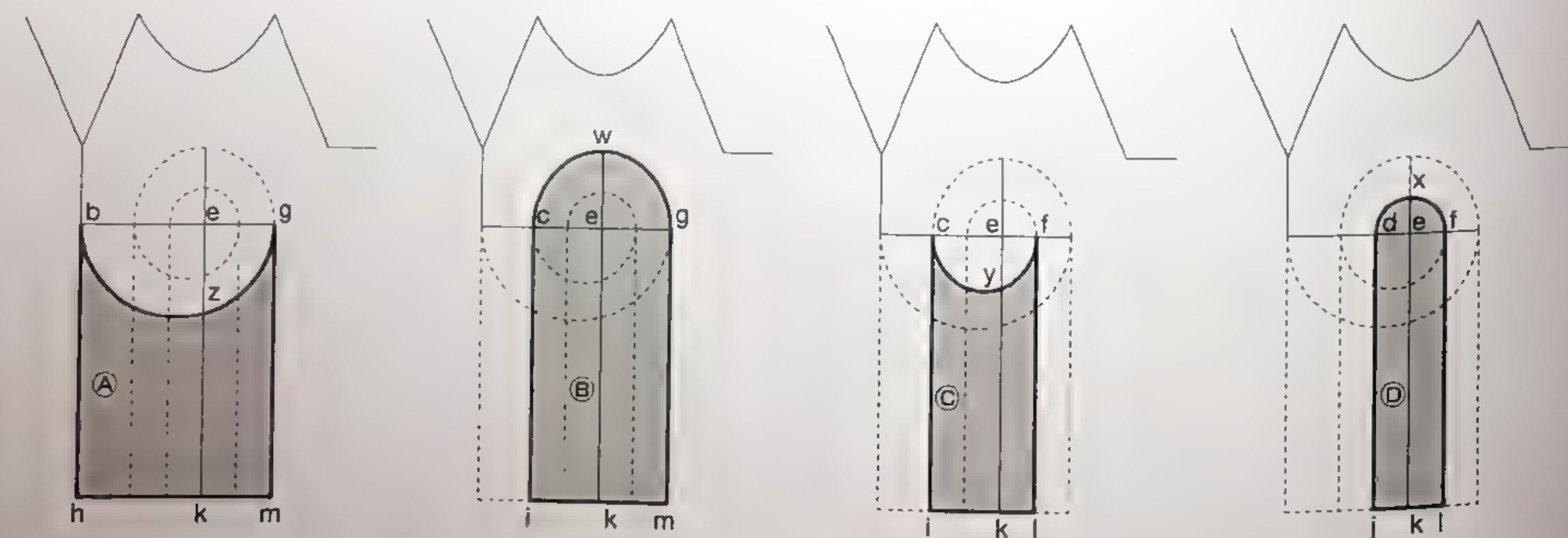


3 Draft the pattern for the front bodice. Shorten the bust point (BP) by 1cm and call that point a .

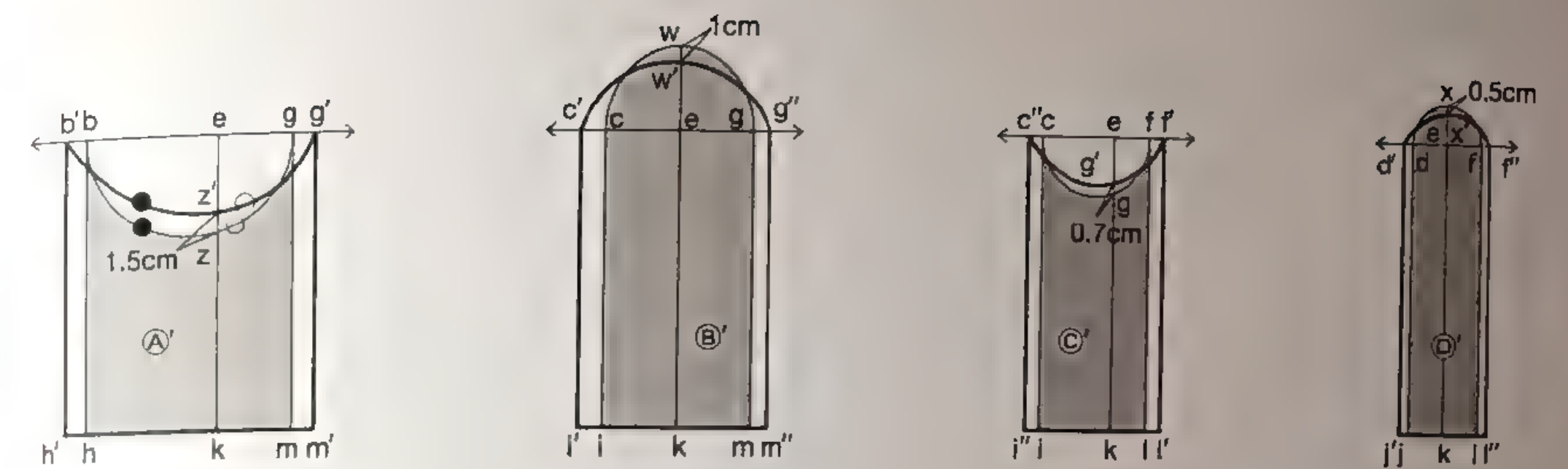


1 Reflect the pattern in 5 to make the full front bodice pattern. Mark a' symmetrically to a. Mark A and A' on the neckline. Draw the spiral. On the line 6cm directly down from a, mark b, and then mark c, d, e, f, and g horizontally from b. Draw vertical lines down from b, c, d, e, f, and g and mark h, i, j, k, l, and m. Draw the covering fabric. Mark n, o, and p on the shoulder line. Mark q on the waist line. Mark r on the left side. Draw the hem line of the covering fabric smoothly and continuously from q to r. Mark s at the intersection of the hem line and the vertical line a to h. Draw a horizontal line from a' and call the intersection with the armhole t. On the line directly down from a', call the intersection with the hem line u. Mark v in the same way from t.

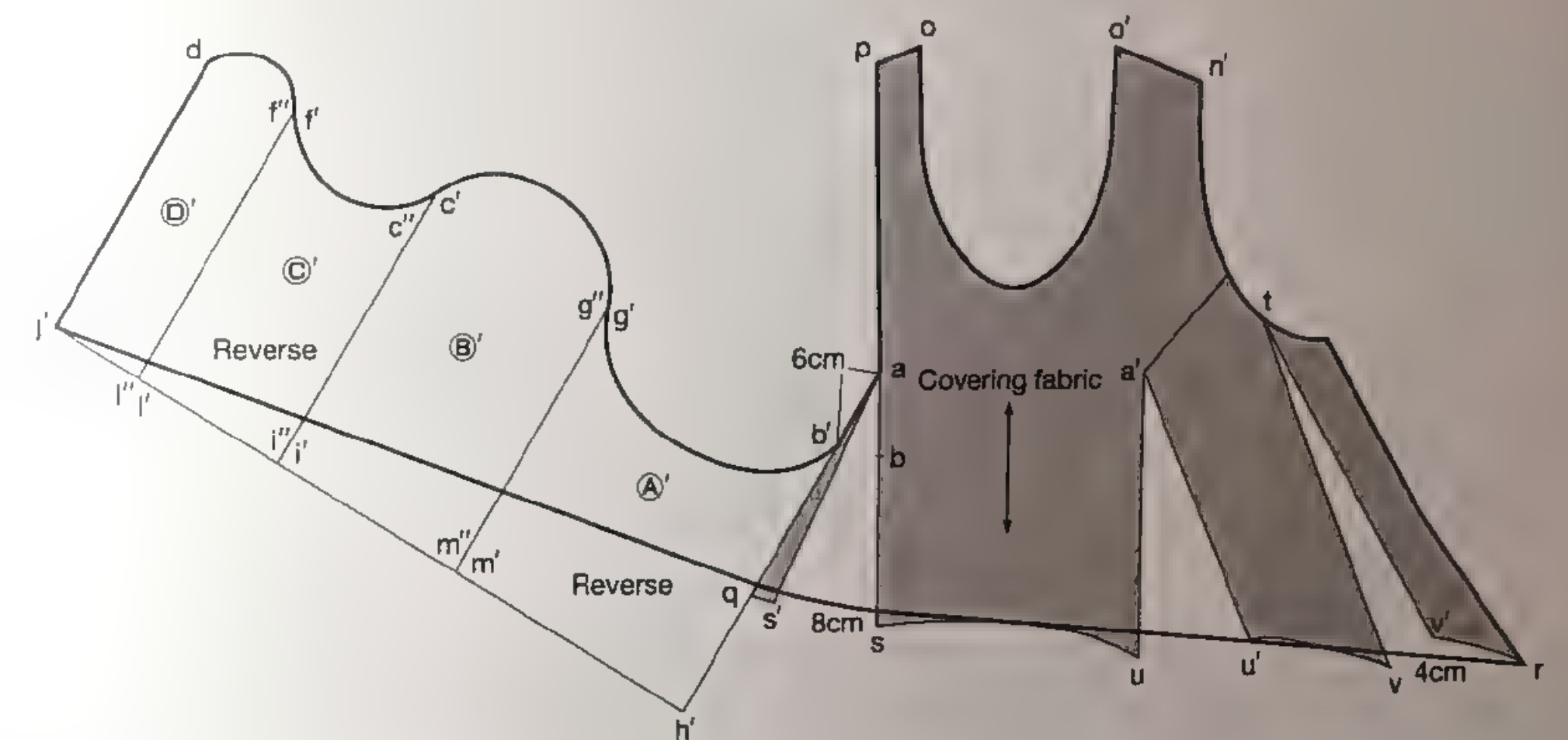
2 Copy the sections of the bodice other than the covering fabric. Trace the spiral with a dotted line and mark the intersections of the centre front line with the spiral as w, x, y, and z. Close the armhole dart. A becomes A'.



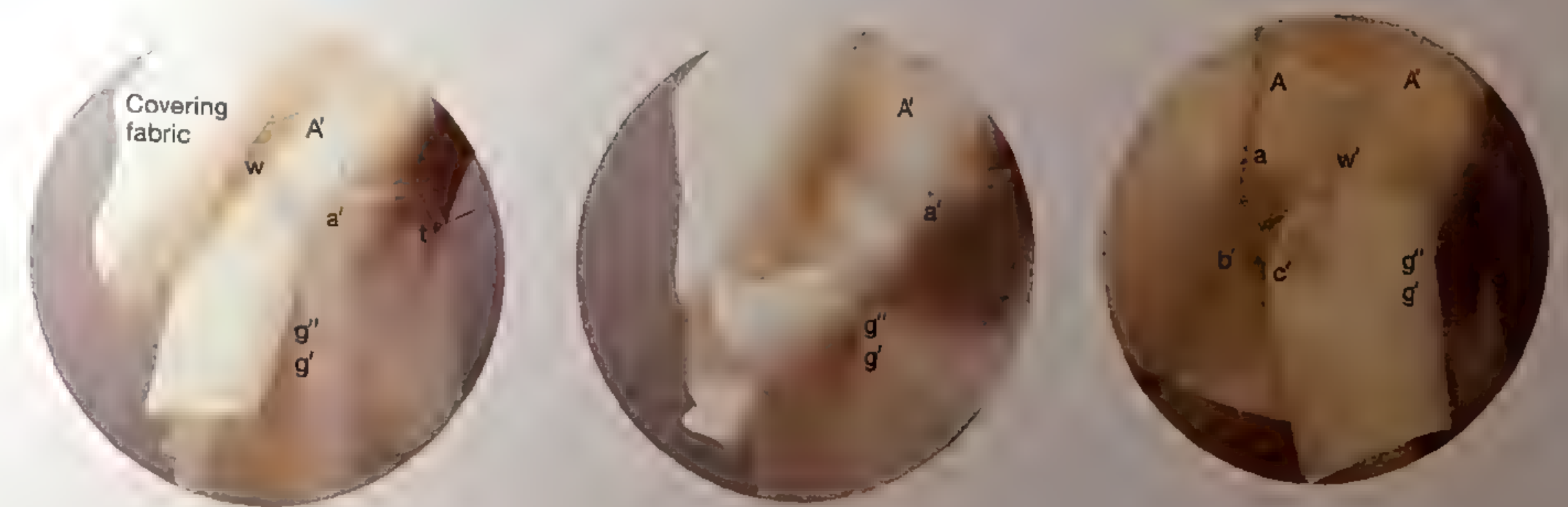
6 Draft the pattern for the covering fabric. Draw the ruffle in separate sections A, B, C, and D.



7 Copy A. Call the length of the curve from b to z measurement ● and that from g to z ○. On the line 1.5cm directly up from z, mark z'. Extend the line horizontally left to right from e. On the horizontal line from e, measure ● from z', and mark it b'. On the line directly down from b', mark h'. Mark g' and m' in the same way. This provides pattern A'. Draw patterns B', C', and D' in the same way.



8 With a' as the pivotal point, close the armhole dart and open out at u. Mark u'. With t as the pivotal point, open at v and mark v'. With a as the pivotal point, open at s and mark the opening s'. Reverse A' and C', join A', B', C', and D', and copy the patterns. Smoothly and continuously draw the hem line of the covering fabric from j' to r.



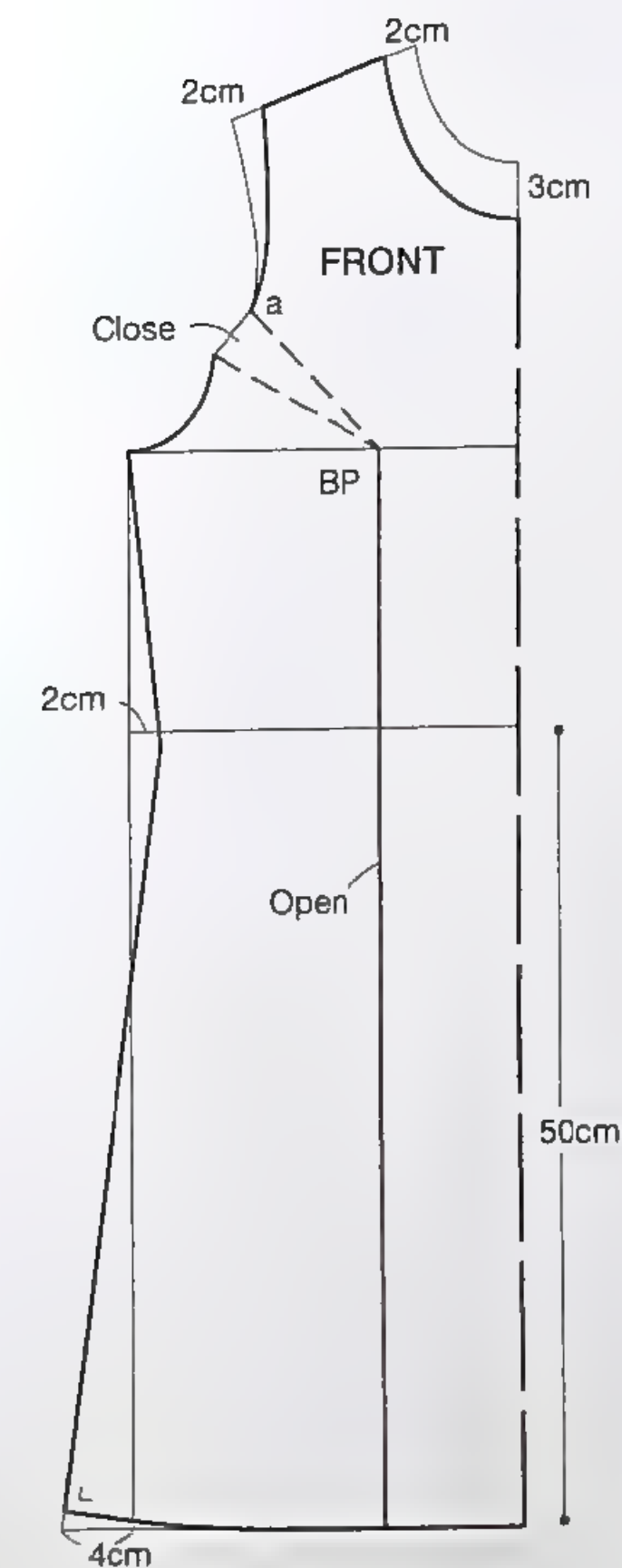
9 Instructions and advice for sewing the spiral. Start sewing from d'. Add fine notches to the seam allowance and flat-fell onto the outside. You will not be able to sew the whole thing in one go, so be patient and break it down into sections. When you've sewn as far as g, flat-fell the seam allowance to the inside so that it is not visible from the right side, and then sew through b' to a'. Leave the section A' to a' to t (the armhole) without fixing. Sew the section from A to A' together with the neckline. Sew the section from t to the bottom of the sleeve end together with the armhole.

Full-bodied ruffle

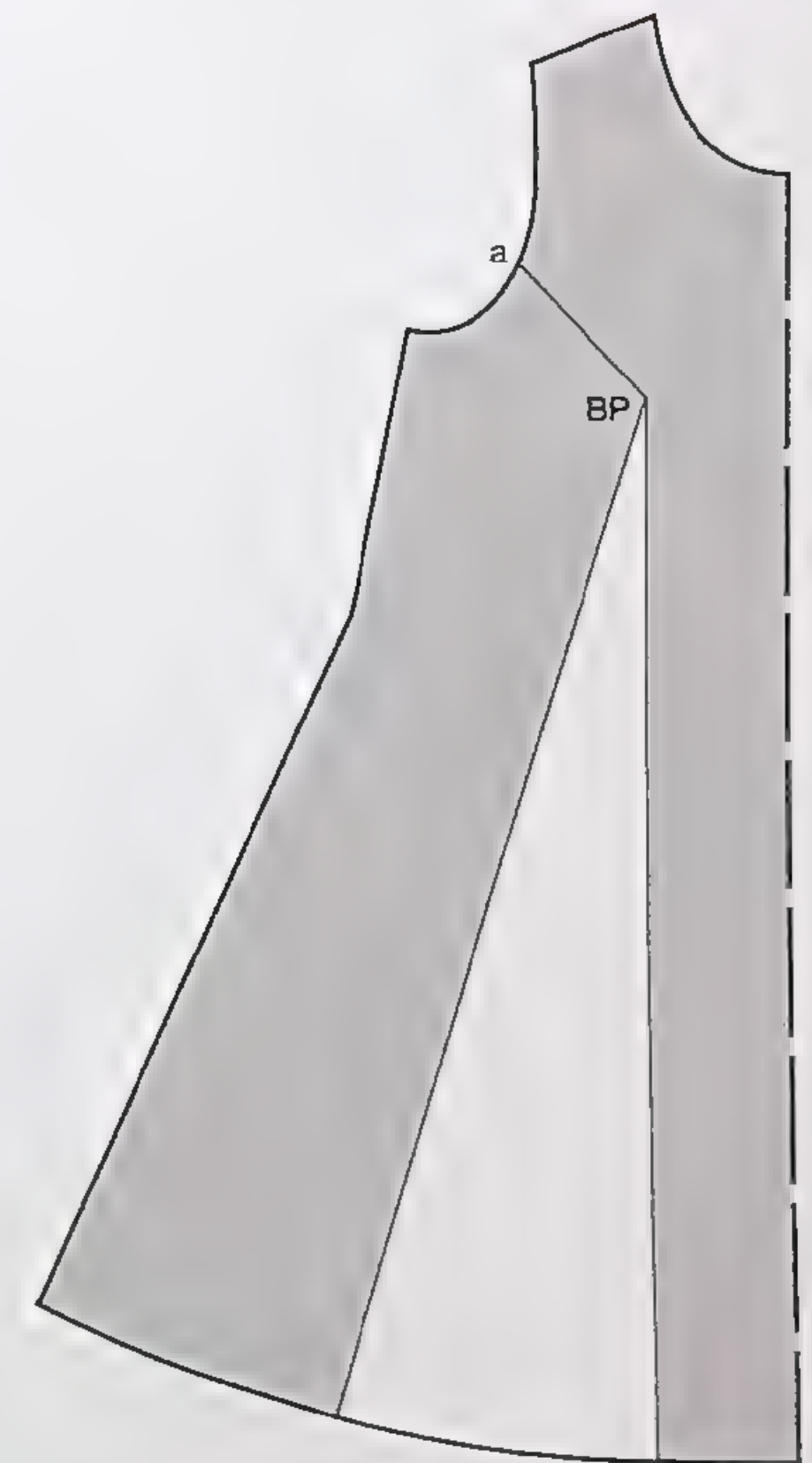


Meander

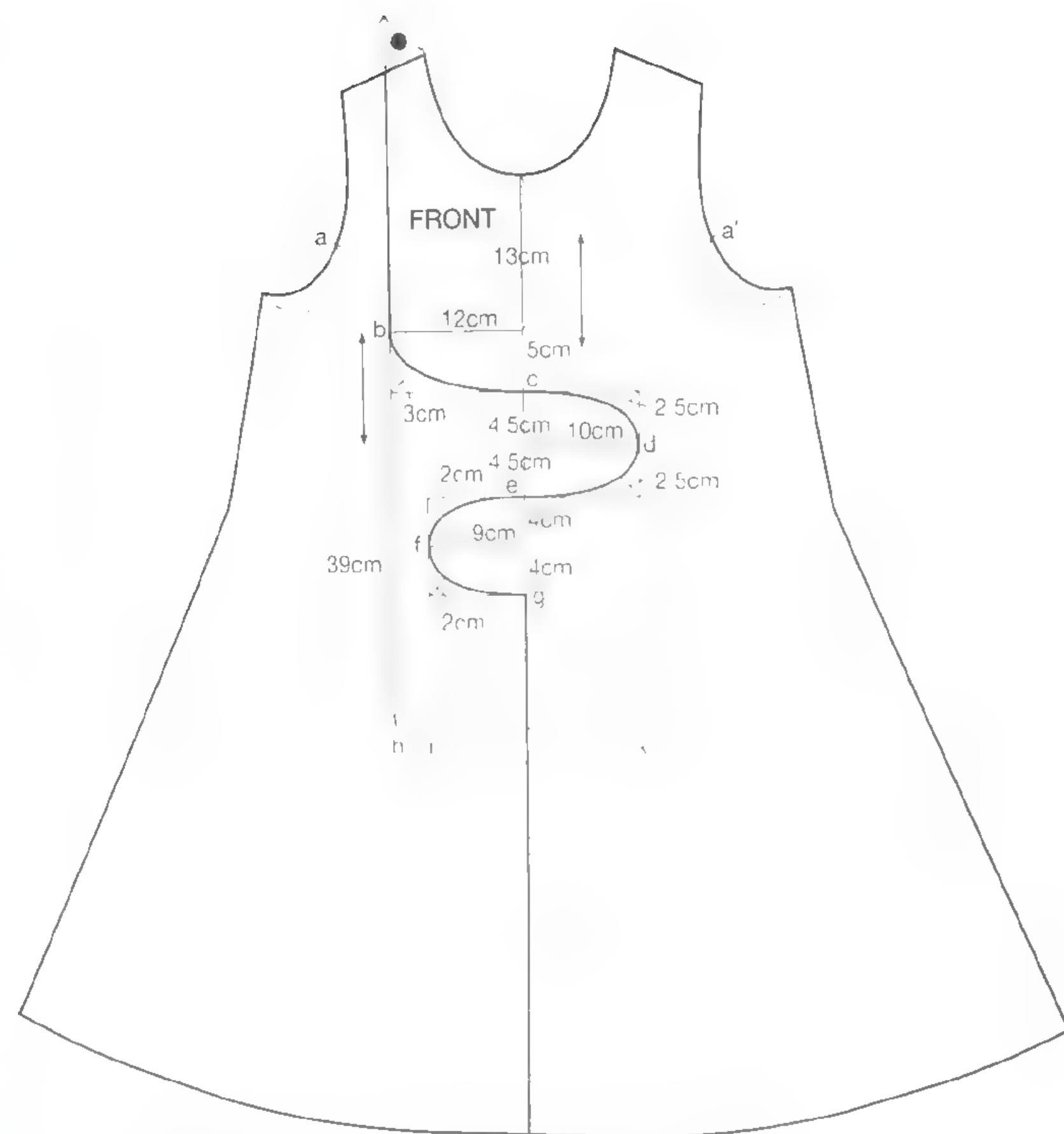
Let's try drawing a wavy line on the bodice and attaching the ruffle above it. Tilting gives more of a three-dimensional feel. If we attach a rectangular ruffle, it will stand upright. To make it lie flat, we match the wave to the curves of the bodice. To add body to the ruffle and give it that three-dimensional fullness, we just need to give the pattern straighter lines than the curves of the bodice.



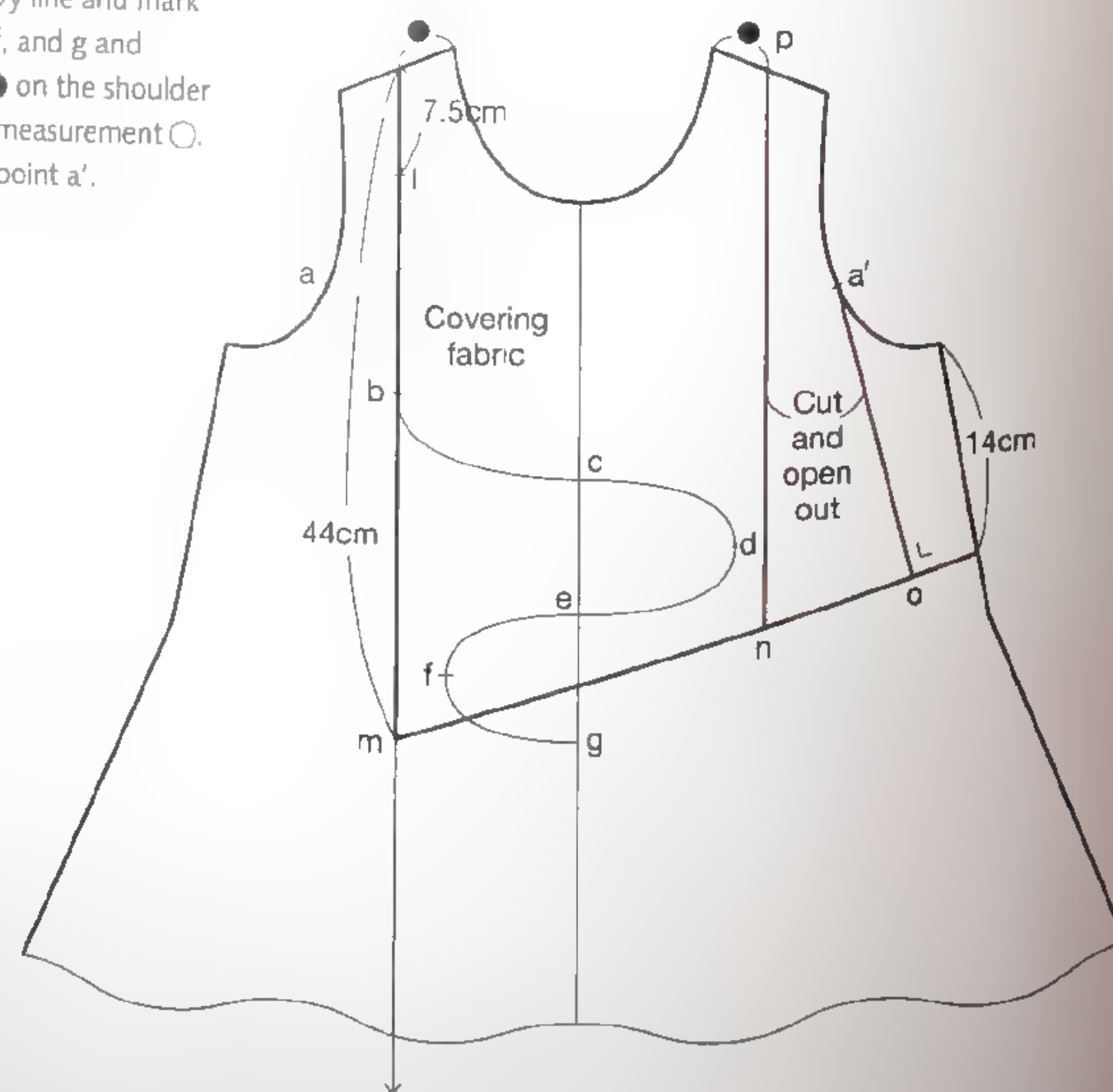
① Draft the pattern for the front bodice and mark point a.



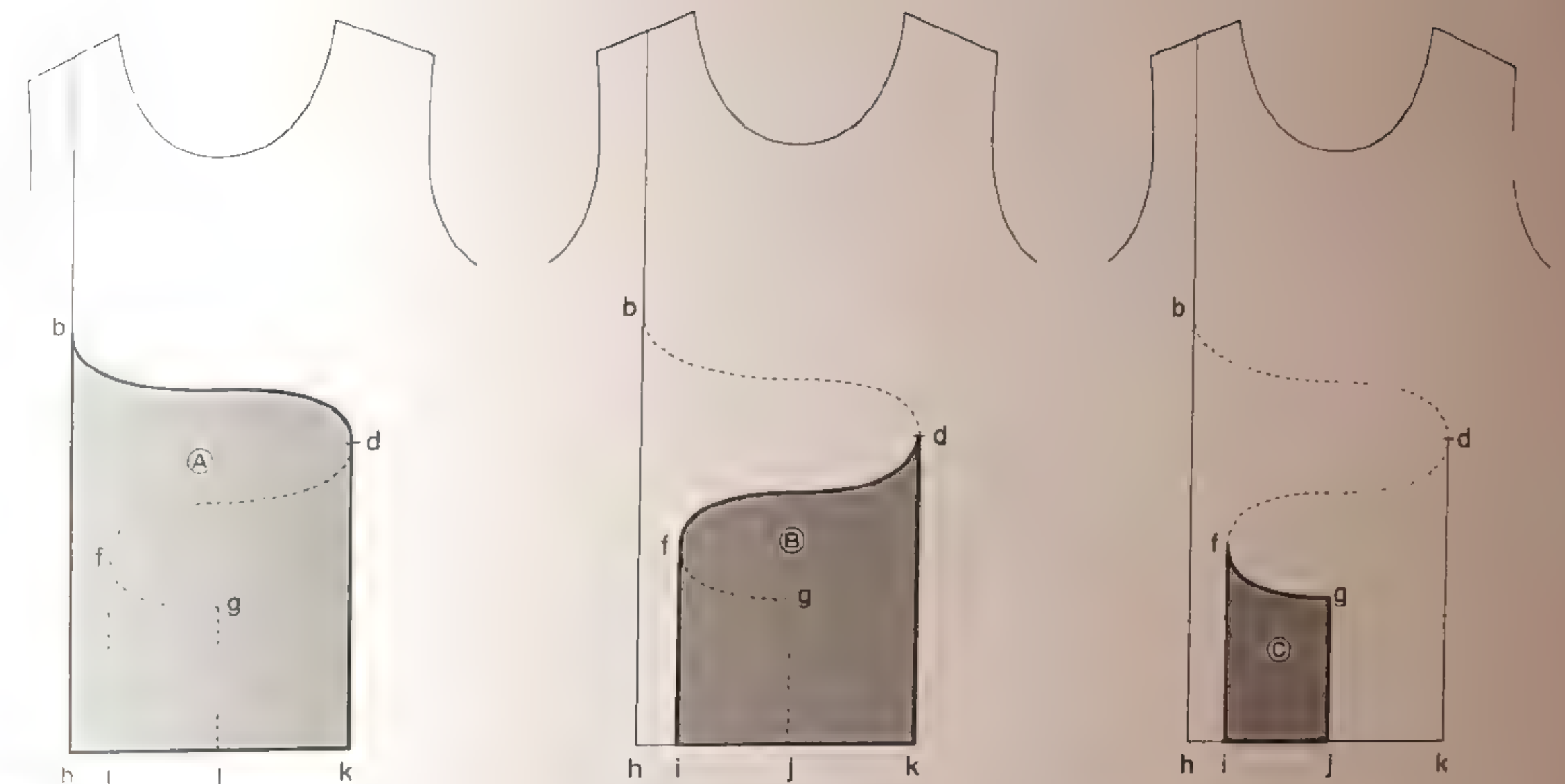
② Close the armhole dart opening out from the bust point (BP) and cut the opening.



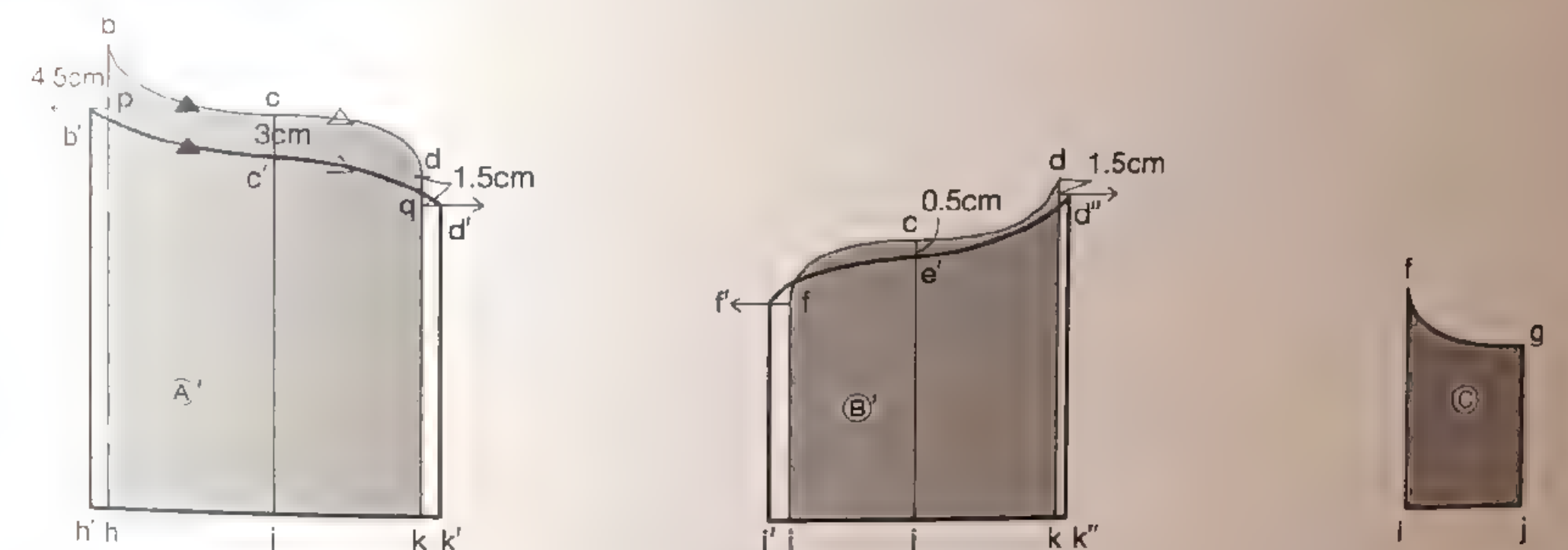
3 Copy the patterns for the left and right sides. Draw a wavy line and mark b, c, d, e, f, and g. Draw vertical lines down from b, c, d, e, f, and g and mark h, i, j, and k. On the line directly up from b, measure ● on the shoulder line. Call the distance from the bottom of the armhole to a, measurement ○. Measure ○ at the bottom of the left armhole and mark the point a'.



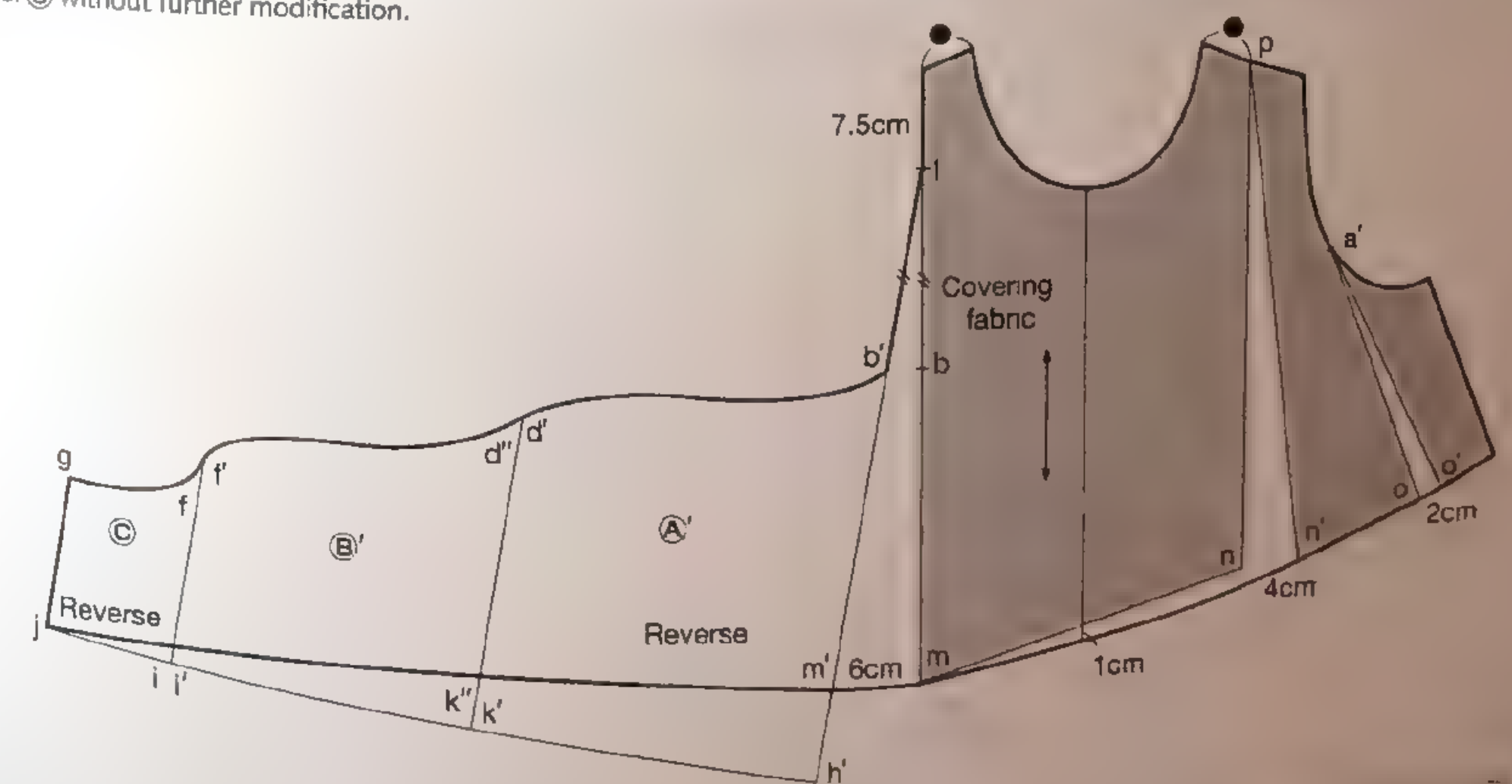
4 Draft the pattern for the covering fabric. Measure ● on the left shoulder line and call the point p. Extend the vertical line and draw the cutting and opening out line. Draw a cutting and opening out line perpendicular to the hem line from a'. Mark l, m, n, and o.



5 Draw the ruffle in separate sections (A), (B), and (C).



6 Manipulate the ruffle on panel (A) to loosen the tilt and make the ruffle stand up. On the line 3cm directly down from c, mark c'. Call the distance from b to c measurement ▲ and from c to d measurement △. On the line 4.5cm directly down from b, mark p. Draw a horizontal line from p, measure ▲ from c' on the horizontal line, and mark point b'. On the line directly down from b', mark h'. On the line 1.5cm directly down from d, mark the point q and draw a horizontal line from it. Measure △ from c' on the horizontal line from q and mark d'. On the line directly down from d', mark k'. Call the pattern delineated by the lines to b', c', d', k', and h' panel (A'). Draw panel (B') in the same way. Draw panel (C) without further modification.



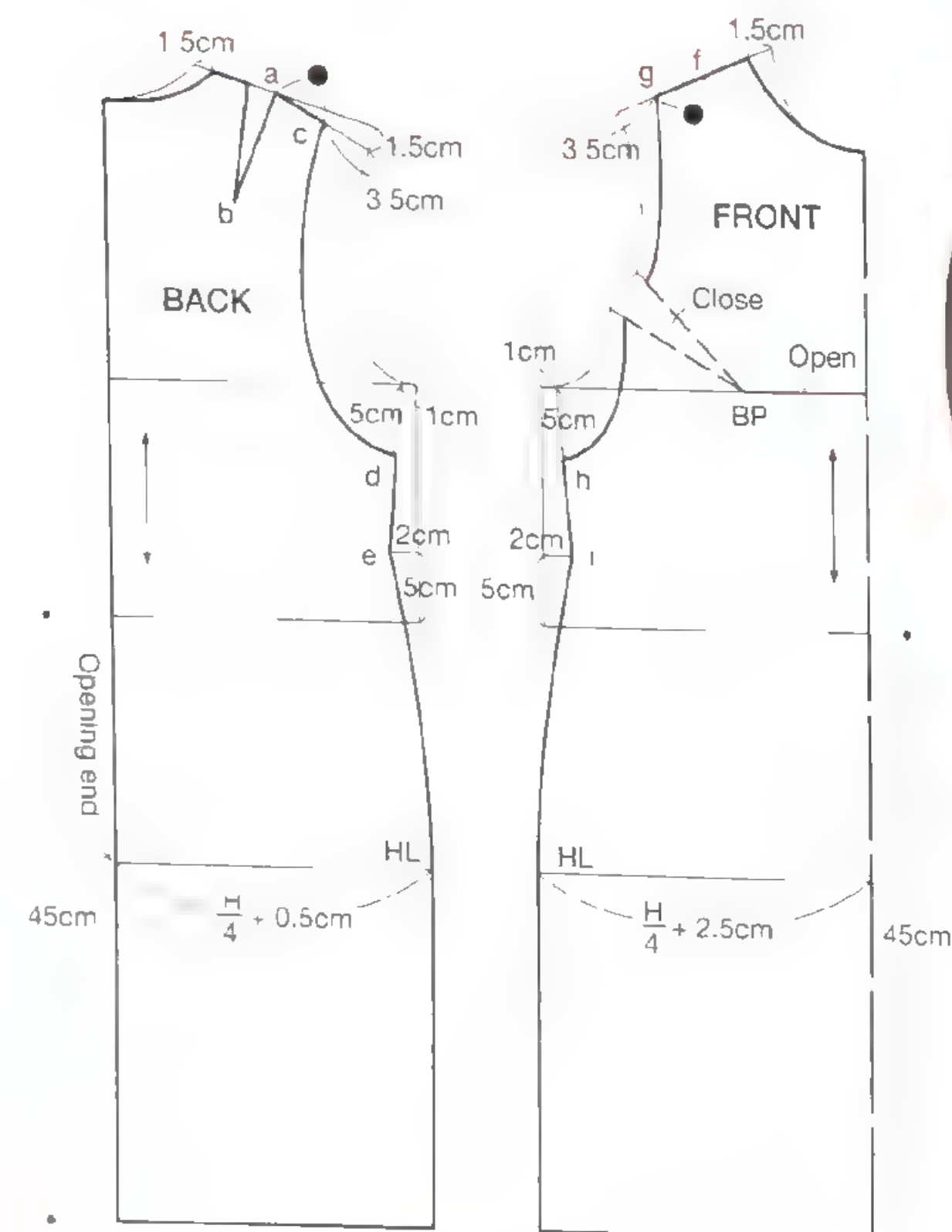
7 Cut l to m, p to n, and a' to o, open out with l, p, and a' as the pivotal points, and mark m', n', and o'. Reverse A' and C, join A, B, and C, and copy the patterns. Smoothly and continuously draw the hem line of the covering fabric from j to o'.

Wearing a bag

Pairing shoulder bags with a dress turns a simple garment into something glamorous and pretty.



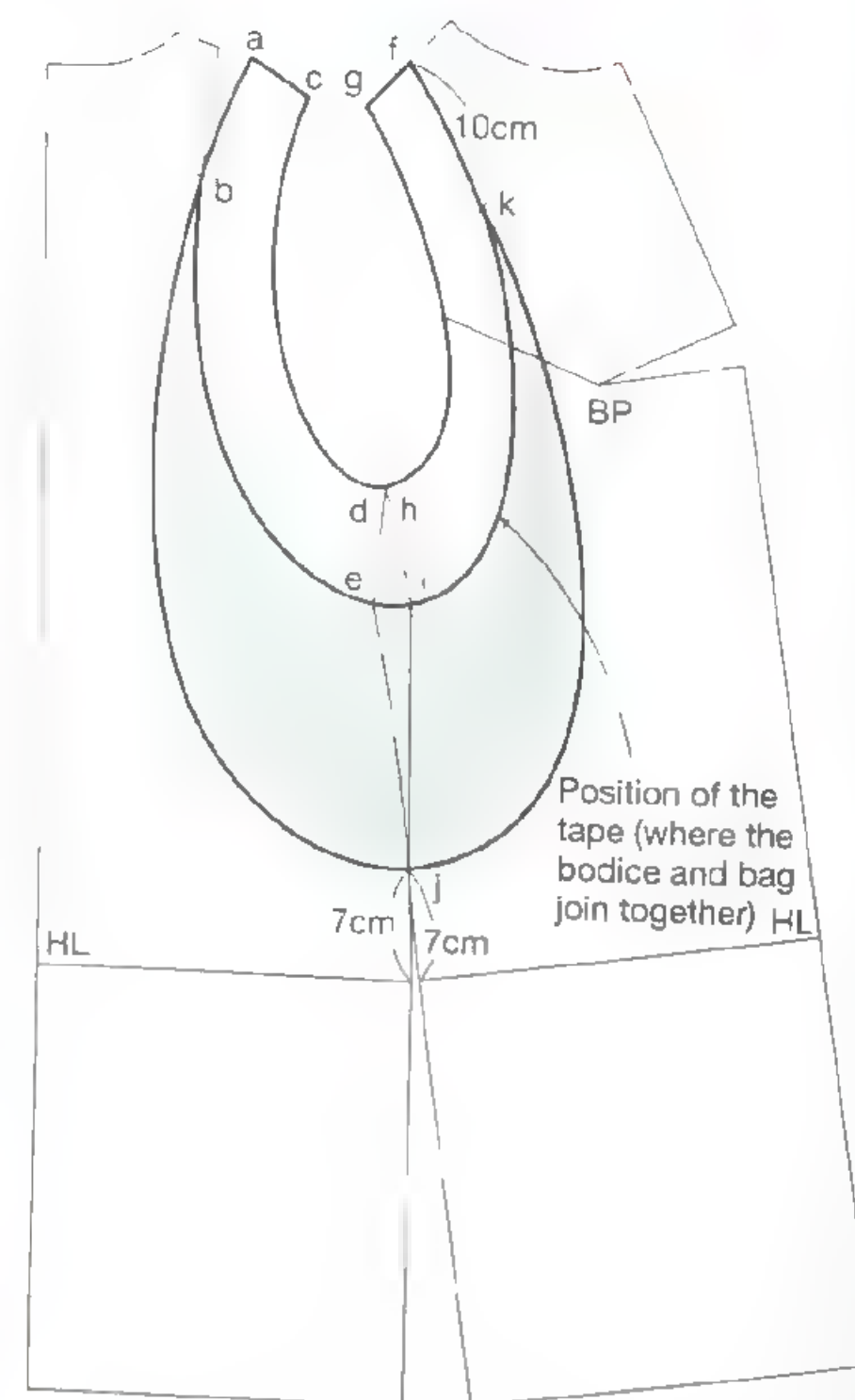
Wearing a bag over the shoulders



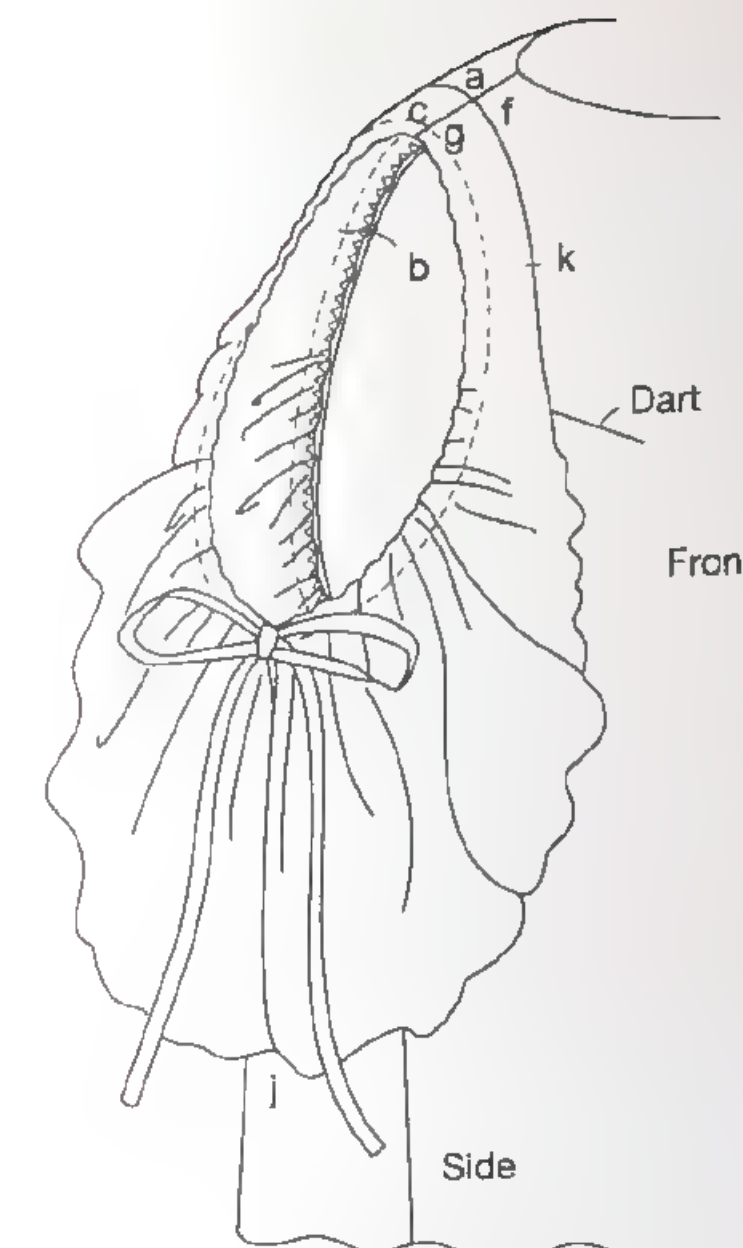
1 Draft the pattern for the dress. Measure ● Mark a, b, c, d, e, f, g, h, and i.



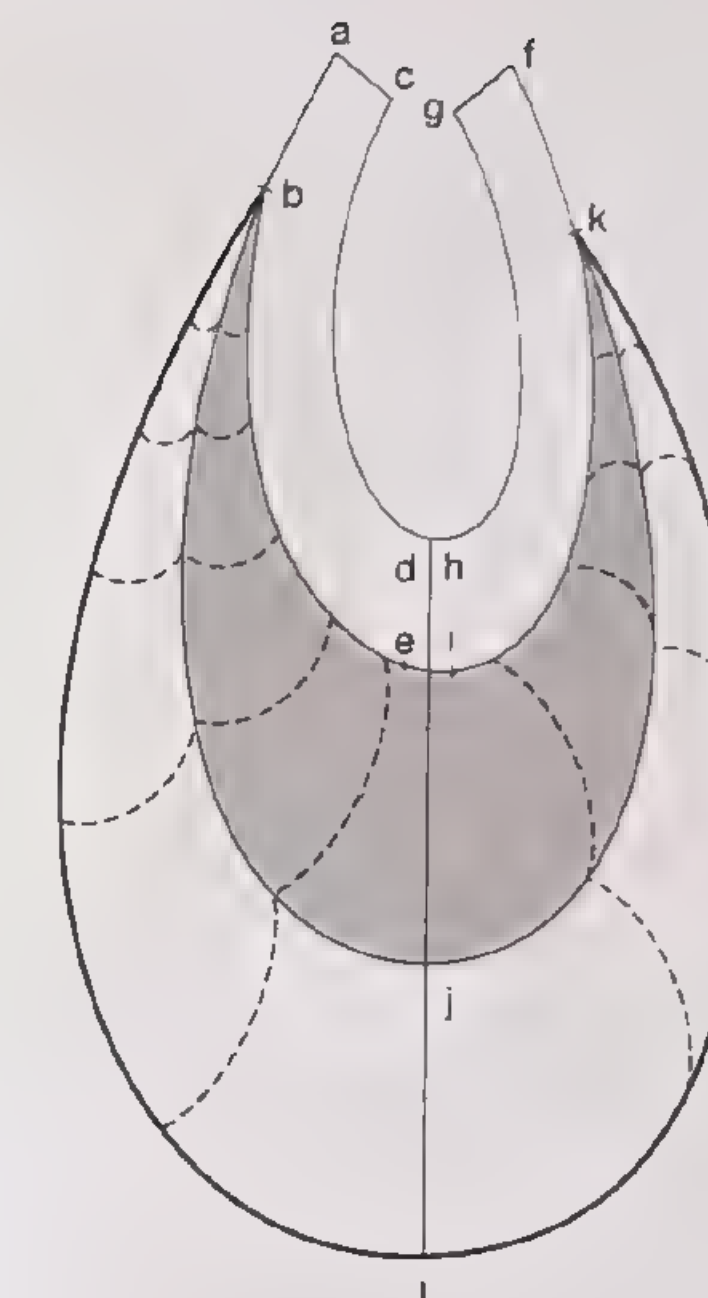
2 Sew the dress together and place on the dress form. Use tape to mark the position where the shoulder bag will go, such that the line goes from a to f through b, e, and i.



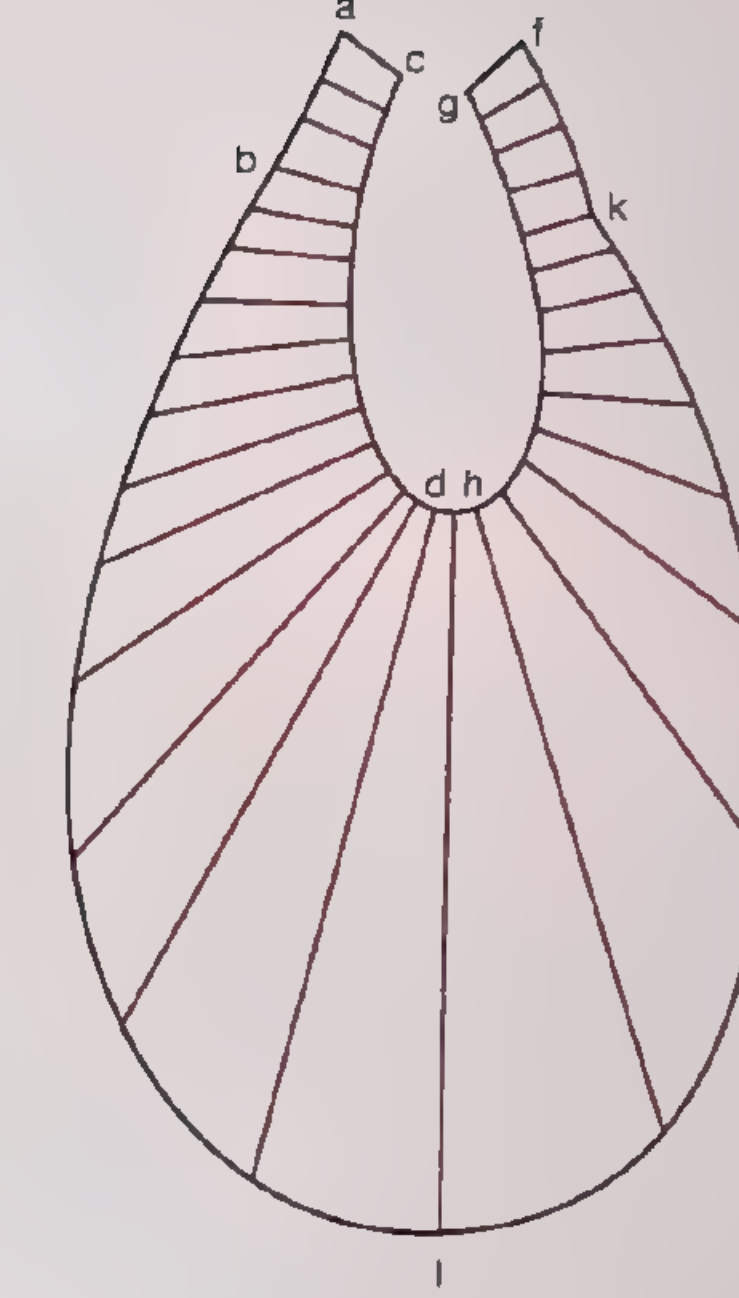
3 Align the front and back patterns as shown in the drawing, and mark a point j 7cm above the hip line. Align d and h with j and copy the bag section. The curves c to d and h to g will make the opening of the bag. Trace the position that you marked with the tape onto the pattern draft. Connect a, b, e, i, and f in a smooth and continuous curve. Sew the bodice and the bag together at this position. Mark k, and draw a curve from b through j to k. The curve from b to j to k will be the finished silhouette of the bag. The area in grey delineated by b, e, i, k, and j will be the side of the bag in contact with the bodice, invisible from the right side.



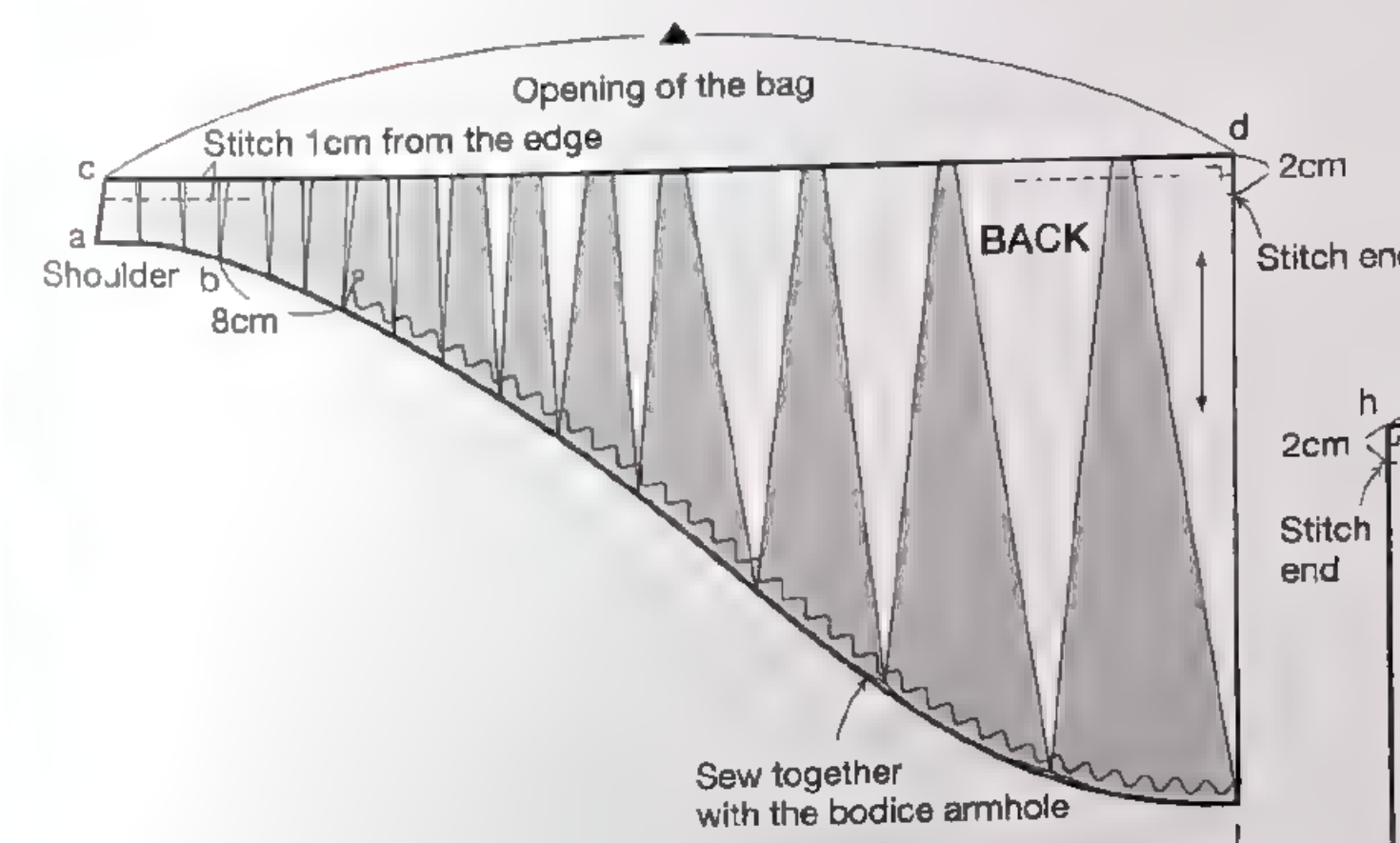
4 The finished bag in place.



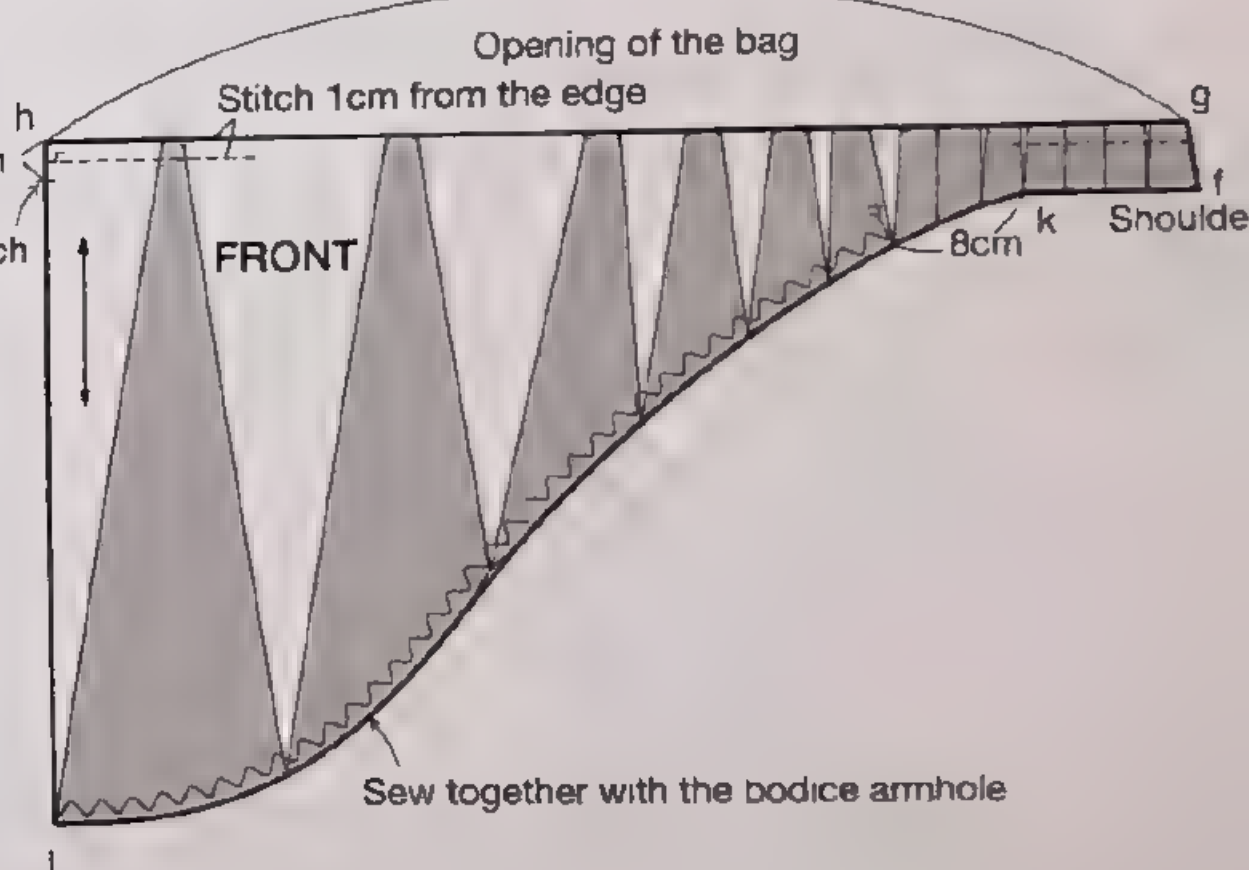
5 Draft the pattern for the bag. Expand the grey section radially from b to k through j, drawing the lines smoothly and continuously.



6 Draw the cutting and opening out lines radially.



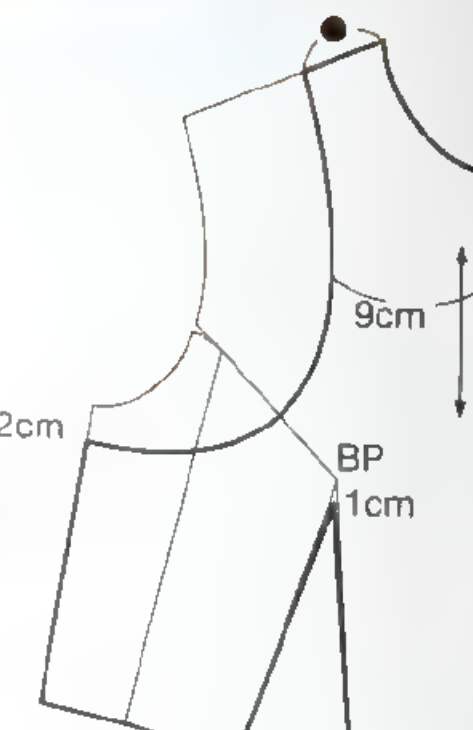
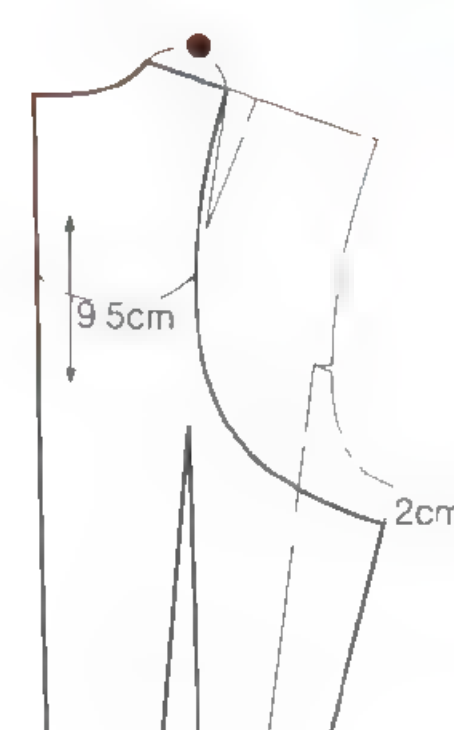
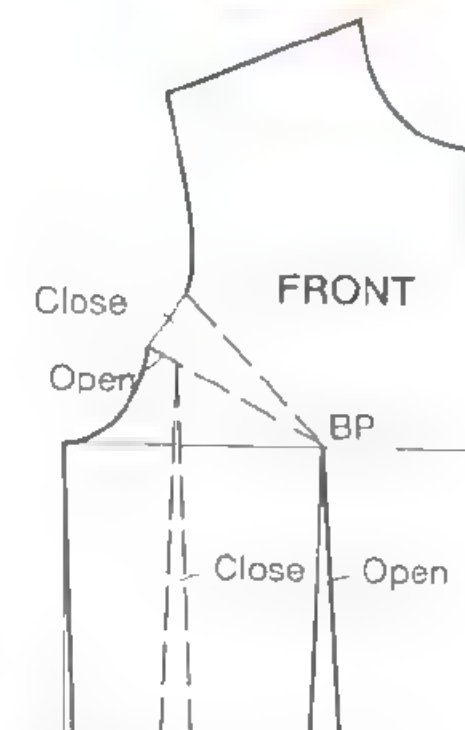
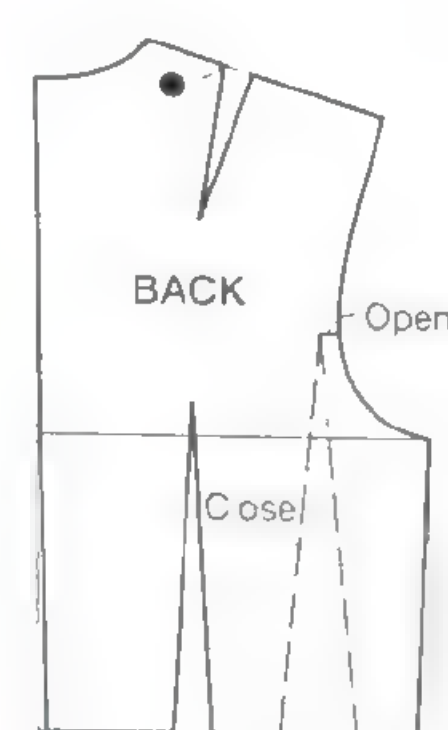
7 For the opening of the bag, cut and open out such that c to d and g to h are horizontal. Fold 1cm from the edge from c to d and h to g, and then topstitch 1cm from the edge to make the channel for the drawstring cord. Stitch the area from a through b, i, and k to f together with the bodice.



8 Draft the pattern for the cord.
*When you tie the cord, you'll get better balance by pulling the fabric together to increase the number of gathers at the bottom

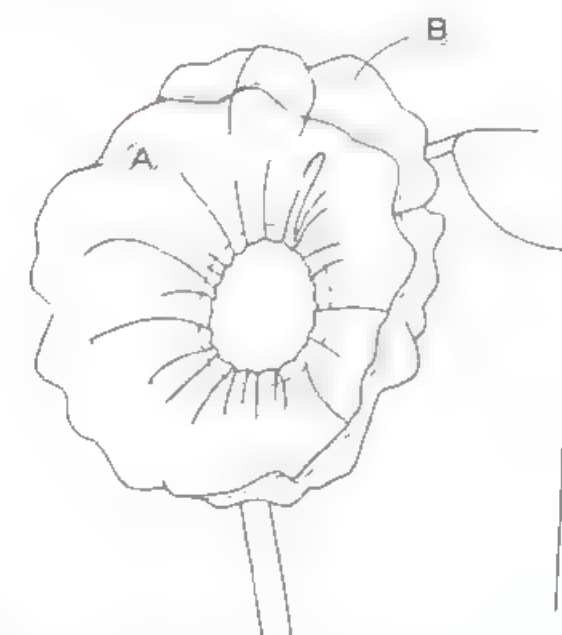
A bag for a sleeve

In this design, we play with the idea of turning a bag into a sleeve. Making the opening of the bag look like the sleeve opening and moving it to face forward gives the effect of a flower blooming into the sun.



1 Move the darts as explained on page 24

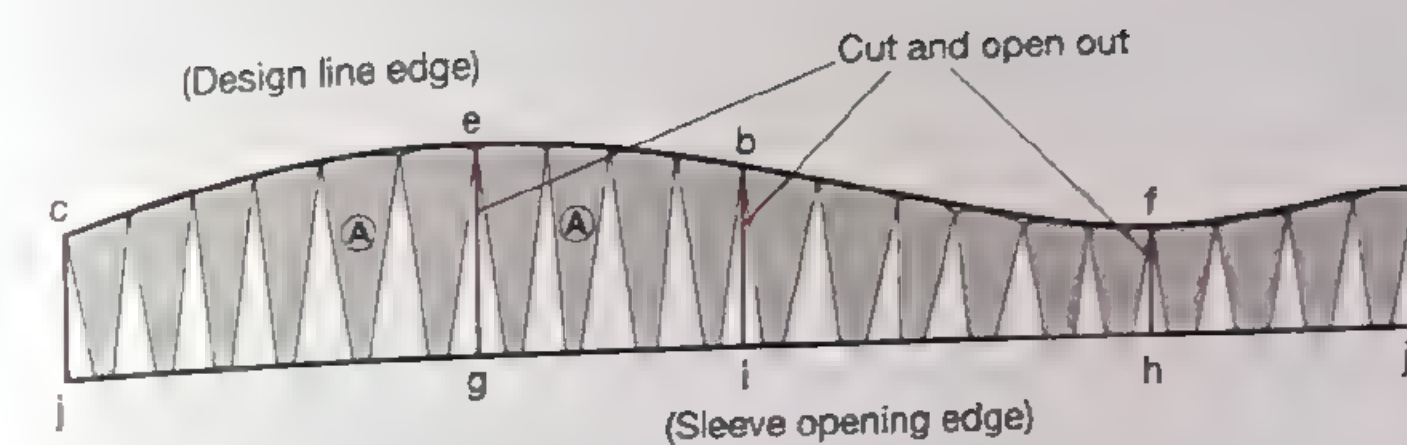
2 After closing the darts, draw the armhole.



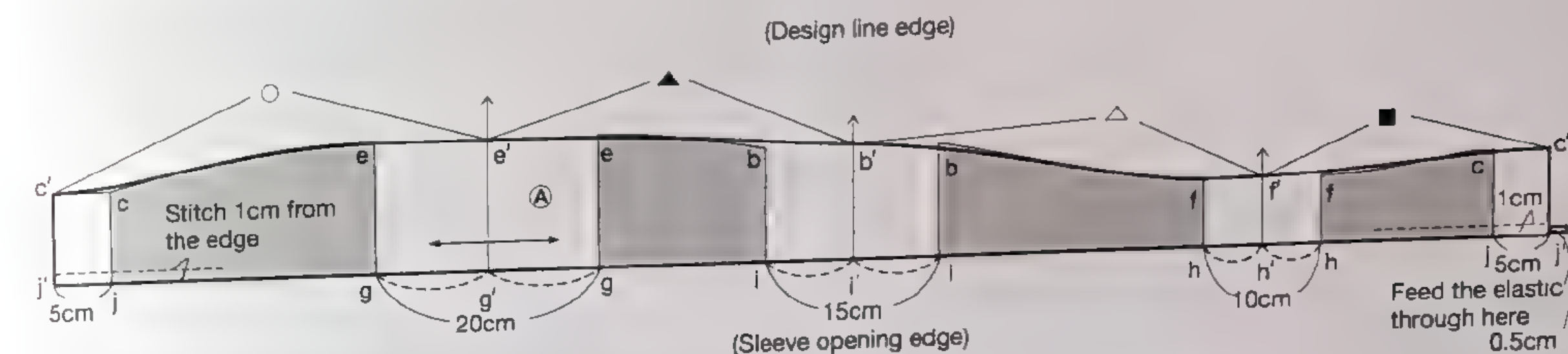
3 The finished sleeve. The sleeve is made up of panel (A), which has the sleeve opening, and panel (B), which goes on the bodice

4 Draft the pattern for (A) Draw a circle of radius 13cm around a. Mark points b and c on its circumference. Position the sleeve opening toward the front. Call the centre of the sleeve opening d. For d, measure 2.5cm horizontally from a, and determine the position 1cm vertically down from there. Draw a circle of radius 4cm around d. The circle will be the sleeve opening. Extend the line connecting a and d, and mark e and f at the points where it intersects with the circle whose centre is a. Call the point at which the sleeve is fullest e, and its shortest point f.

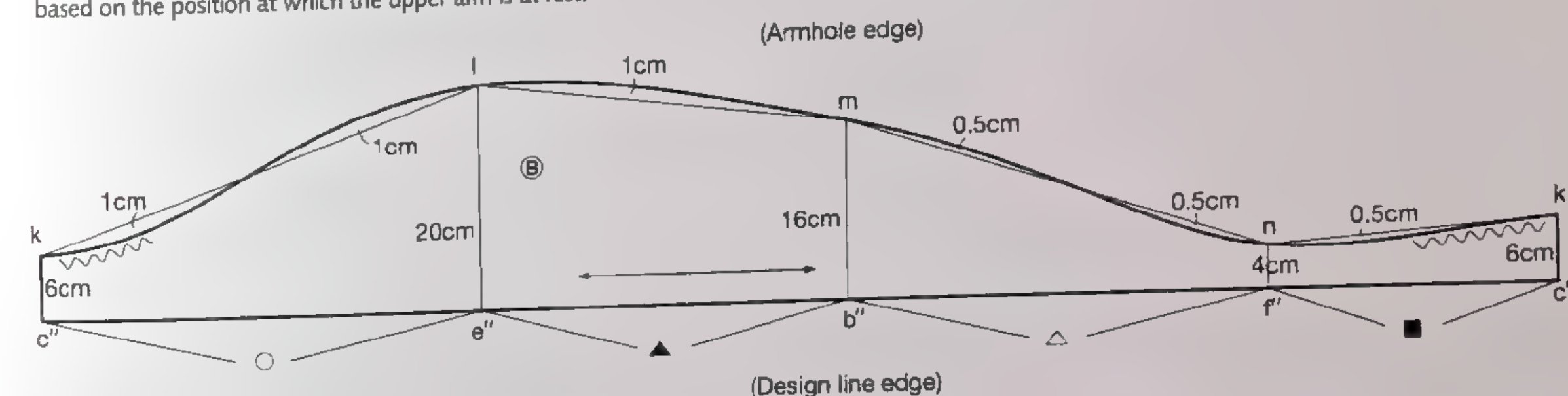
5 Draw the cutting and opening out lines radially from d. Mark g, h, i, and j on the sleeve opening



6 Cut along line c to j and open out so that the sleeve opening for (A) is horizontal. Draw the additional cutting and opening out lines.



7 Keep balance in mind when you cut and open out the lines that will determine the amount of gather. Mark j', g', i', and h' on the sleeve opening edge. Mark c', e', b', and f' on the design line edge. Call the distance c' to e' measurement \bigcirc , e' to b' measurement \blacktriangle , b' to f' measurement \triangle , and f' to c' measurement \blacksquare . On the sleeve opening edge, mark the stitching of the channel for the elastic tape. Decide on the length of the elastic tape based on the position at which the upper arm is at rest.

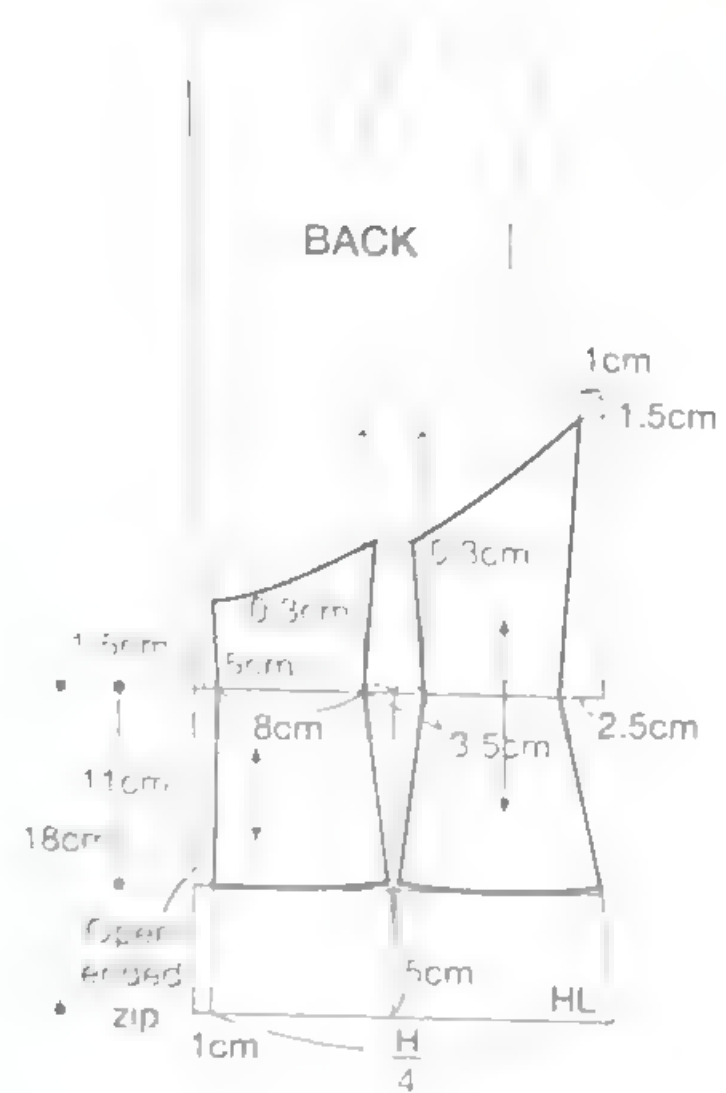


8 Draft the pattern for (B) Draw a horizontal line, which will be the design line. On the horizontal line, mark c". Measure \bigcirc and mark the point e". In the same way, mark b", f", and c", and draw a line directly up from each to the armhole edge. Decide the approximate length by which you will go up to ensure that the sleeve opening will come to the front. Mark k, l, m, and n (on the piece I put together for reference, k to c" was 6cm; l to e" 20cm; m to b" 16cm; and n to f" 4cm). The longer you make l to e", the more the sleeve will sit over the front. I took balance into account when deciding on the length, although I also used basting (tacking) to amend the design and help me make my decision. Draw the armhole edge in a smooth and continuous curve.

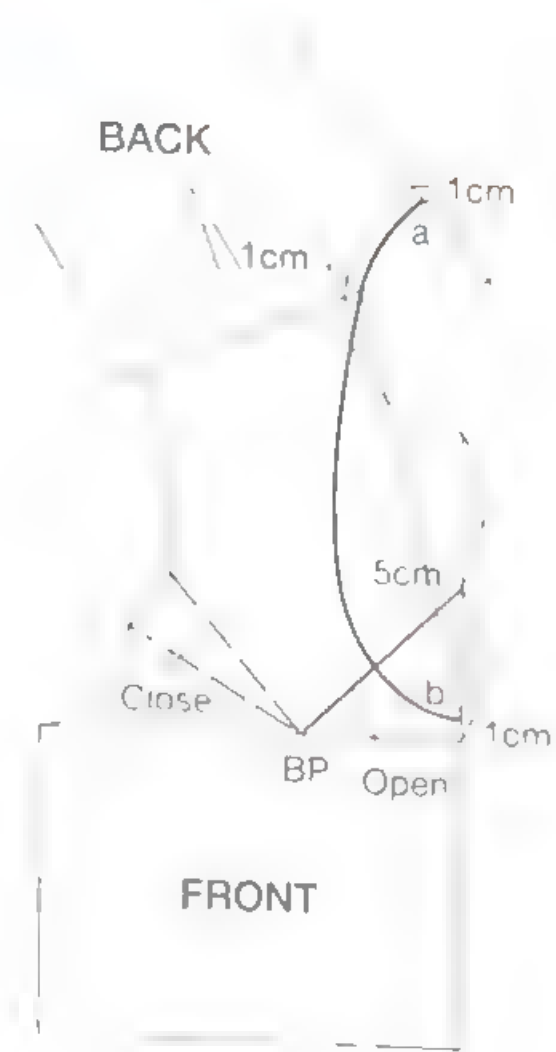


A bag around the neck

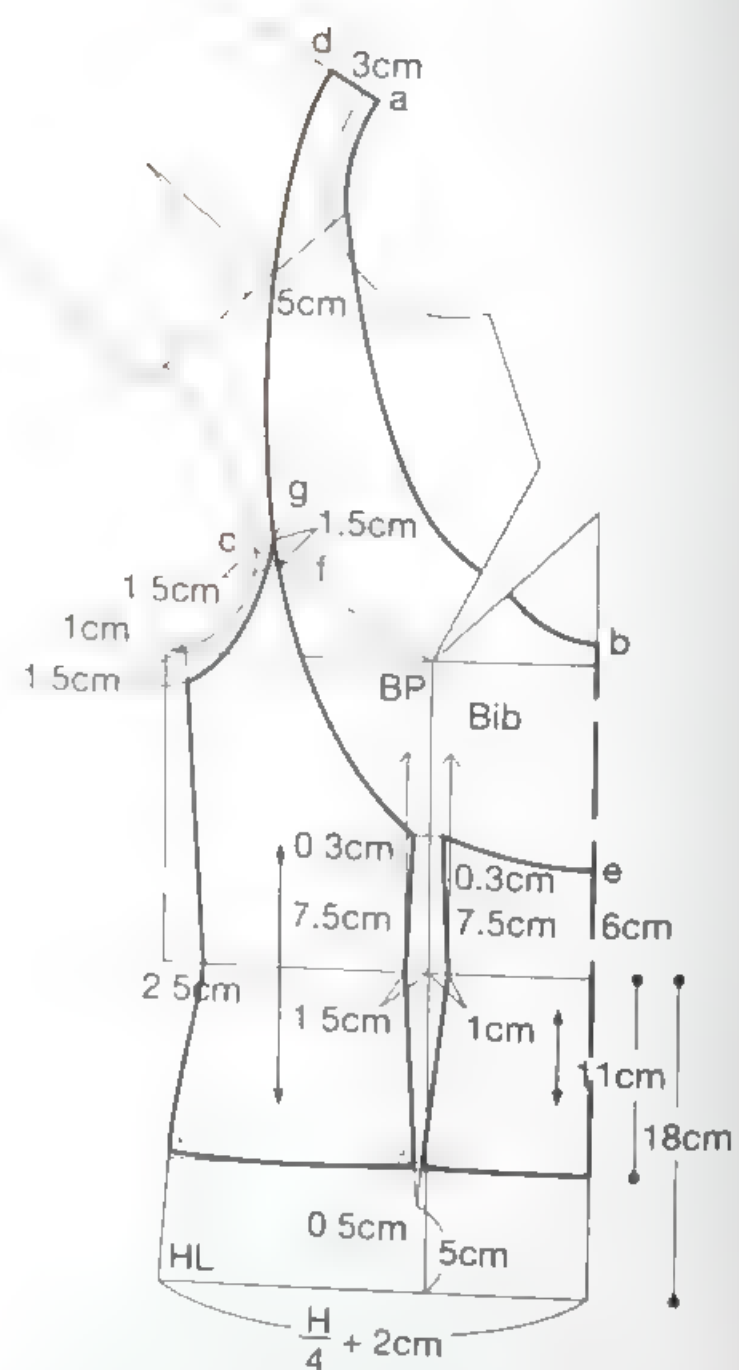
For this design, we'll try wearing a bag around the neck. The halterneck bag undulates out of the blouse like a huge necklace.



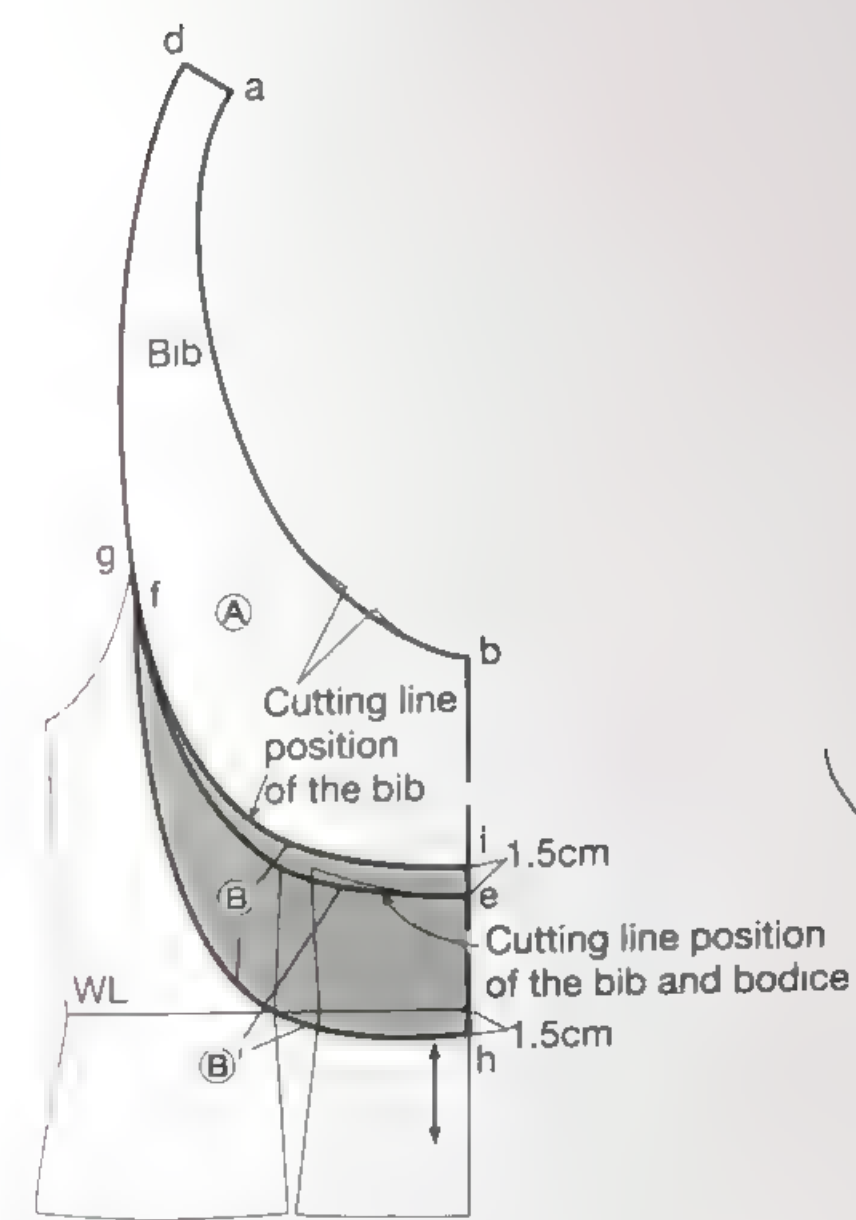
1 Draft the pattern for the back bodice.



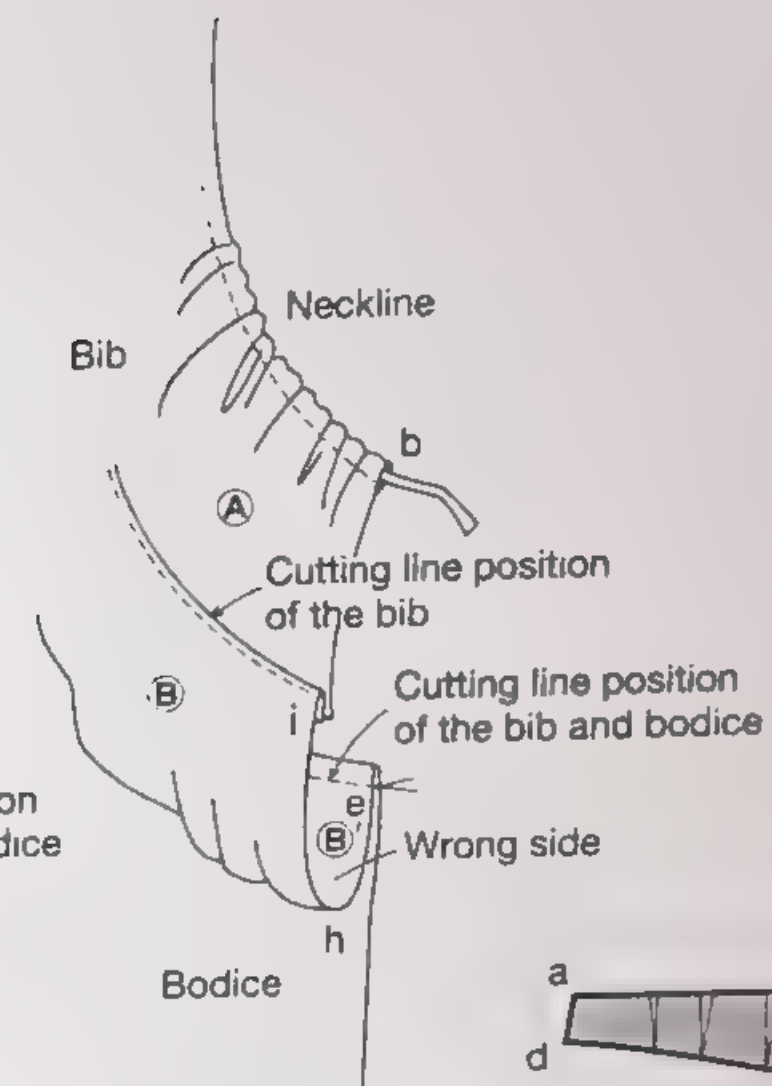
2 Align the front and back slopers (blocks) at the shoulder and copy the patterns. Add 1cm to the back neckline and mark a. Mark b on the centre front line. Draw the neckline smoothly and continuously from a to b. Move the armhole dart to the neckline



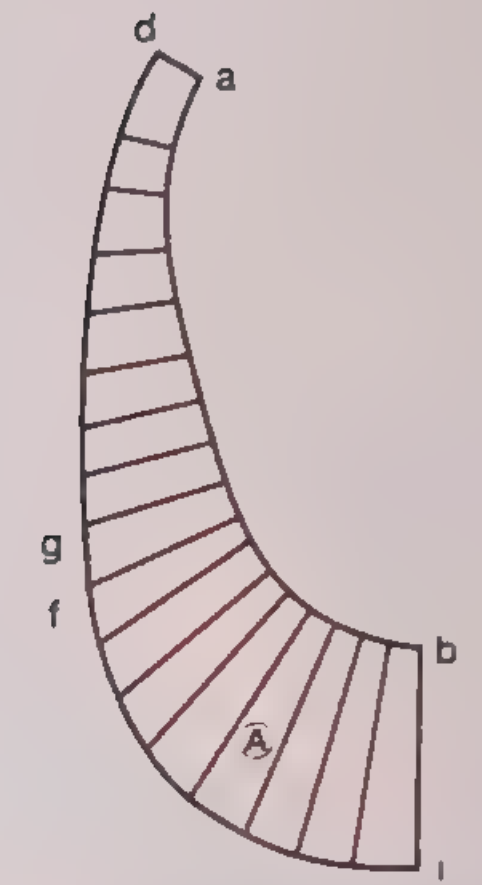
3 Divide the pattern into bodice and bib sections. Close the armhole dart and mark c on the armhole. Mark point d 3cm from a on the centre back line. Mark e on the centre front line. On the line from c to the BP, mark f 1.5cm towards the BP from c. Draw a smooth and continuous curve from d through f to e. Mark g 1.5cm above f. Divide the pattern into the bodice and bib sections at curve g to e. Draw the armhole down from g to the bottom of the side.



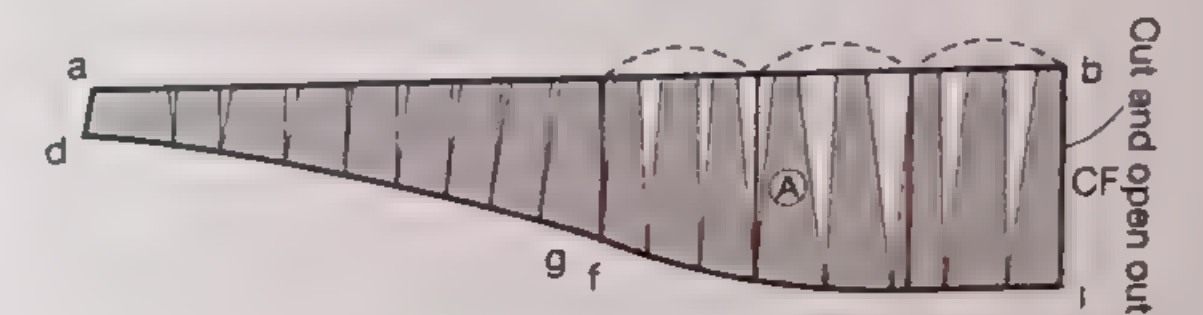
4 Draft the pattern for the bib section.
Divide into three panels, (A), (B), and (B'). (B') is joined to (B) and invisible from the right side.
Mark h 1.5cm below the waist line on the centre front line. Draw a curve from f to h.
Mark i 1.5cm above e. Draw a curve from f to i. This curve will be the design line of the bag.



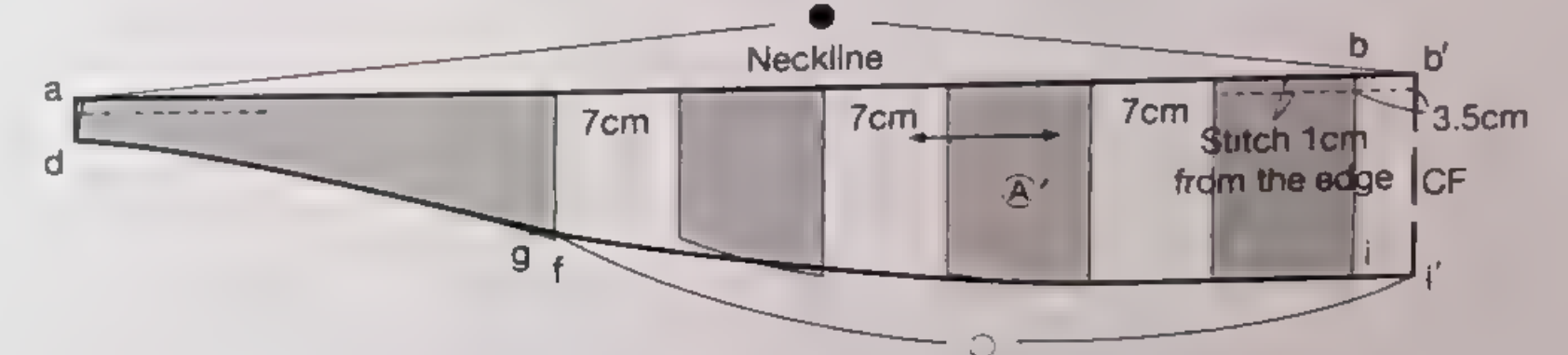
5 The finished bag.



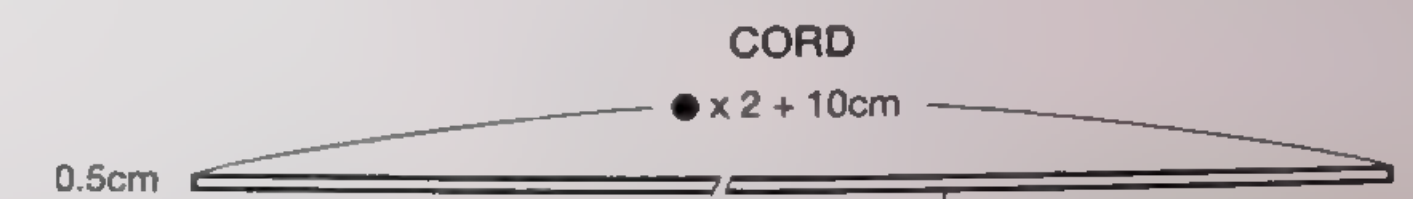
6 Draw the cutting and opening out lines radially.



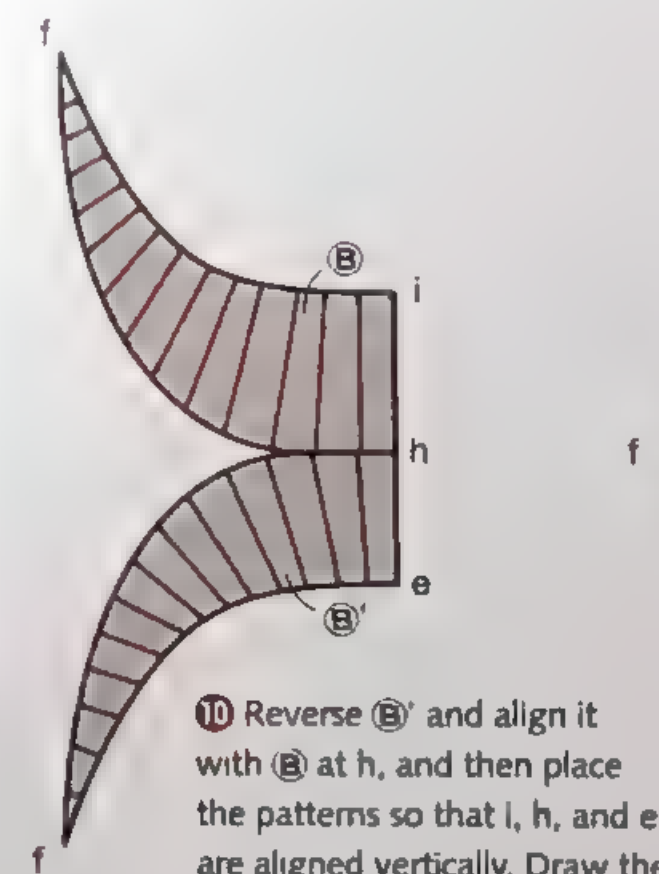
7 Cut and open out so that a to b is horizontal. Draw the additional cutting and opening out lines as marked in red.



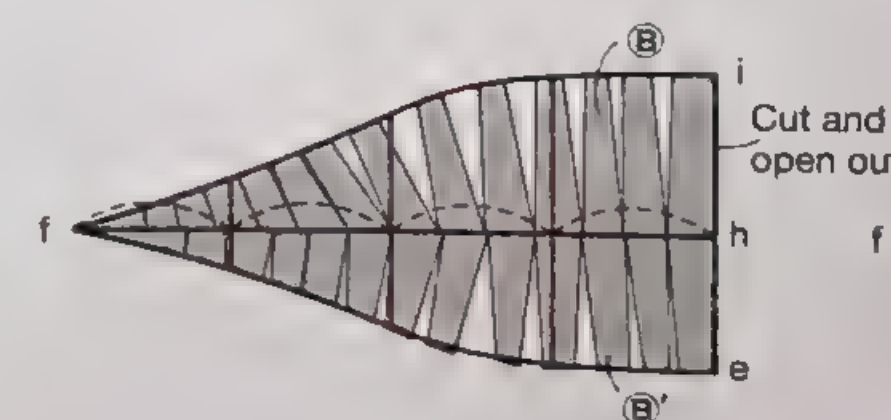
8 Cut and open out. Mark b' and i'. Call the distance from a to b' measurement ●. Call f to i' measurement ○. Stitch the channel for the drawstring cord on the neckline. This is panel A'.



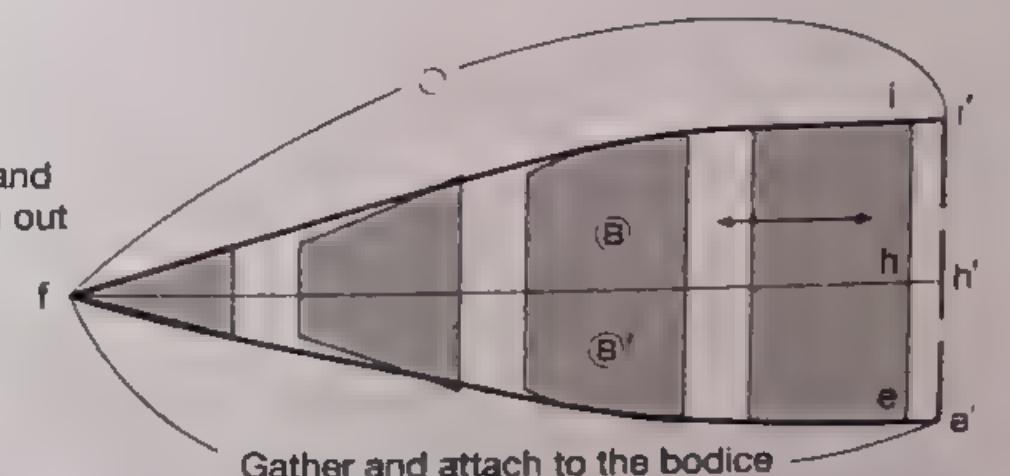
9 Pattern drafting for the drawstring cord.



10 Reverse (B)' and align it with (B) at h, and then place the patterns so that l, h, and e are aligned vertically. Draw the cutting and opening out lines.



11 Draw a horizontal line from h to f. Cut and open out so that f to h is horizontal. Draw the additional cutting and opening out lines as marked in red.



12 Cut and open out in equal sections until the distance from f to l is measurement \bigcirc . Draw the line smoothly and continuously. Gather f to e' and sew together with the bodice.

Elastic shirring

Elastic shirring makes the fabric want to spring back in proportion to the degree by which you compress it. This makes the edges of the fabric ripple up, as in panel (A) below.

When you add shirring to a garment at the accent points, it will ripple at the shoulders, neckline, armholes, and other places where you need structure. Dealing with these ripples can be a headache, so I tried making panel (B) in an attempt to add shirring without causing the edges to ripple.

Basic technique

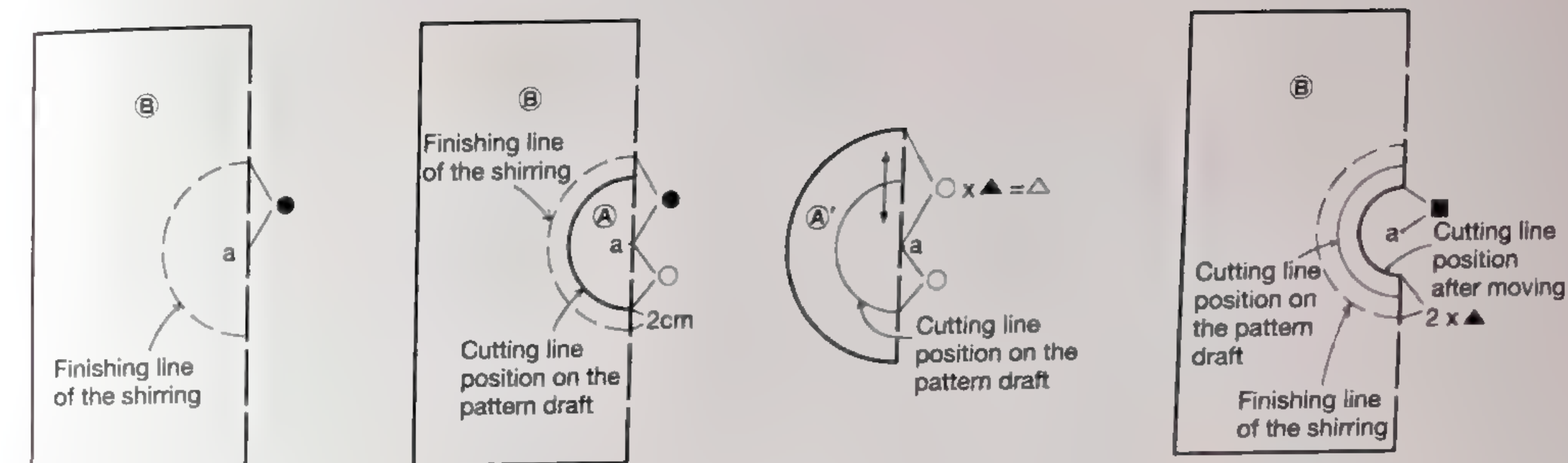


How to make panel (B)



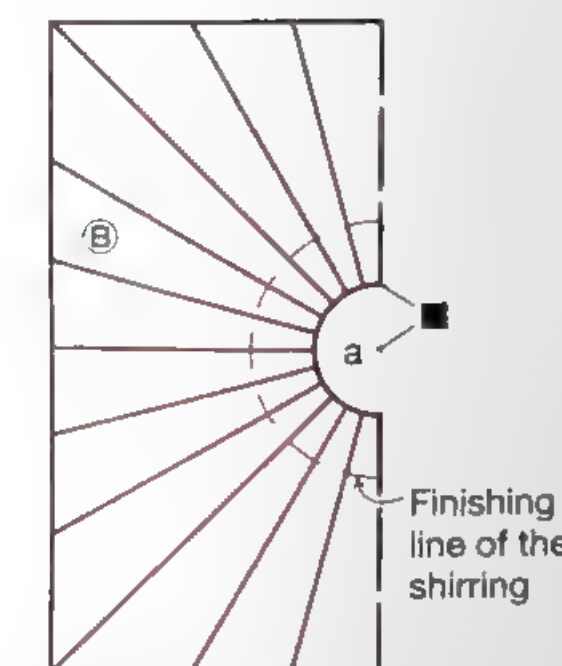
1 Do a trial stitch to work out the amount of fabric you need for the shirring. The material, the stitch size, and the density of the shirring will all make a difference, so it's essential that you do the trial stitch under the same conditions.

2 For example, if a piece of fabric 30cm square shrinks down to 17cm, you will need $30 \div 17 \text{cm} \approx 1.76$, that is to say 1.8 times as much material. In other words, the scaling factor is 1.8.



3 Make shirring with a finishing line curve of radius \bullet . Draw a circle of radius \bullet in a broken line around a (where a is the centre of the fabric).

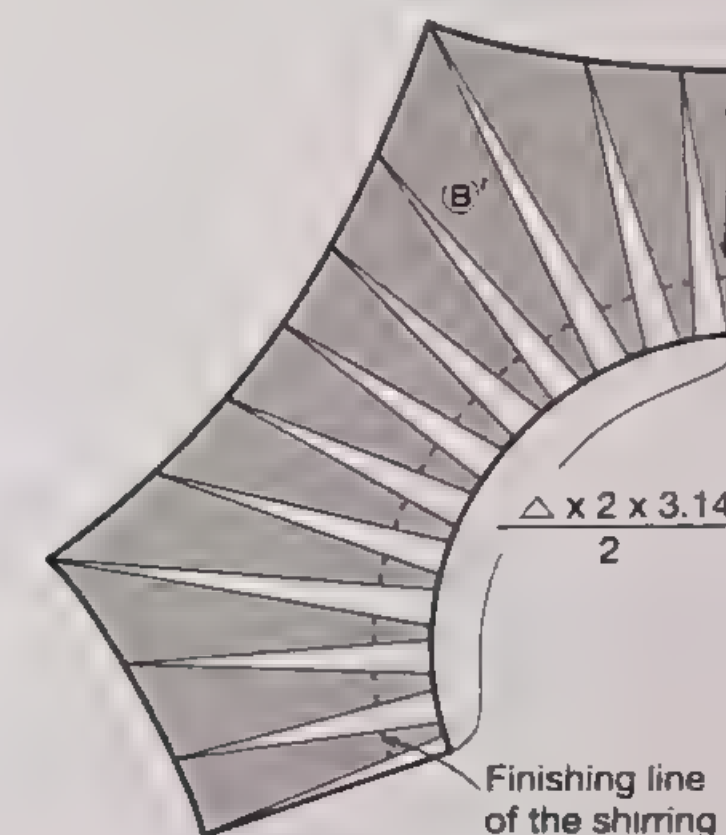
4 To make the design without the edges rippling, I came up with the idea of making the design seams at the inside and outside of the broken-line circle. If you put the design seam at the finishing line, the seams will end up standing out when you shirr the fabric. To stop the seams from standing out, I moved the design seam slightly to the inside. Moving it by 2cm to this position makes a circle of radius \circ and gives us the cutting line position on the drawing. Divide the pattern into parts (A) and (B) at the cutting line.



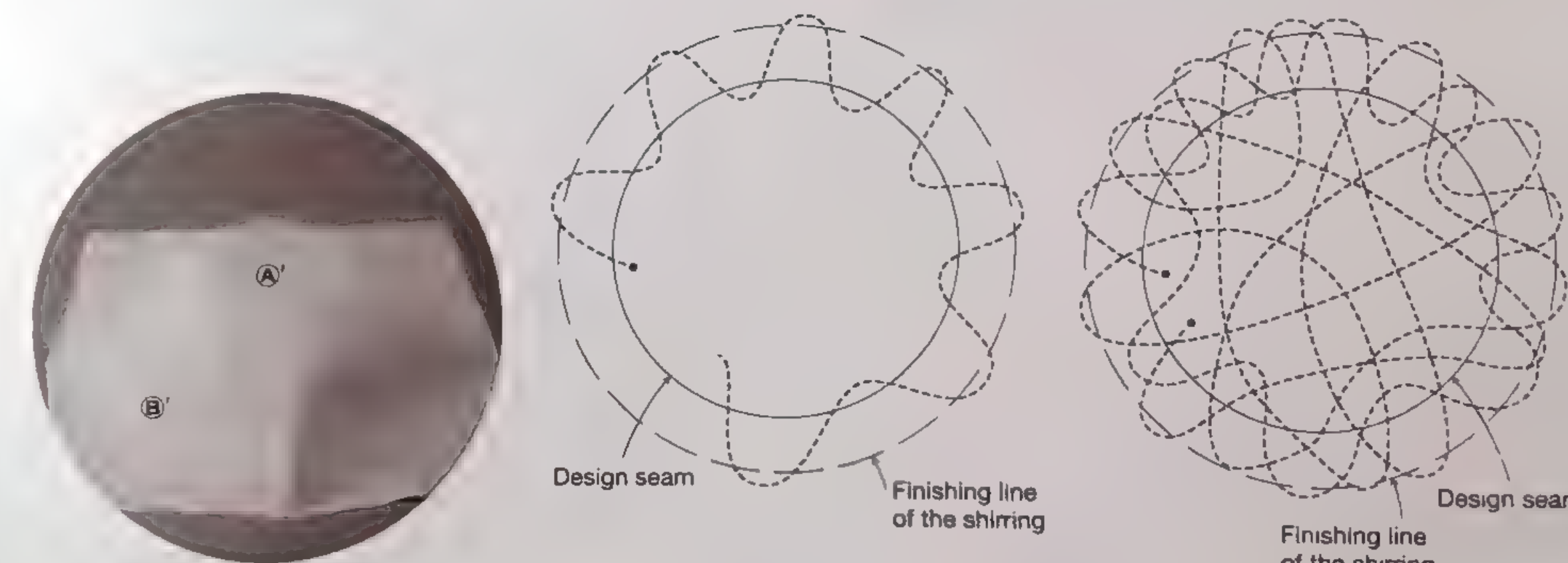
7 Draw the cutting and opening out lines radially.

5 Trial stitch the shirring to determine the scaling factor. Call the scaling factor \blacktriangle . The radius \circ for manipulating (A) will be $(\circ \times \blacktriangle = \Delta)$. Call the circle with radius Δ panel (A').

6 Measure the distance by which the design line will move as $2\text{cm} \times \blacktriangle$ to the inside. Mark this as radius \blacksquare .



8 Cut and open out to a distance equal to half the circumference of (A'). (B) becomes (B').

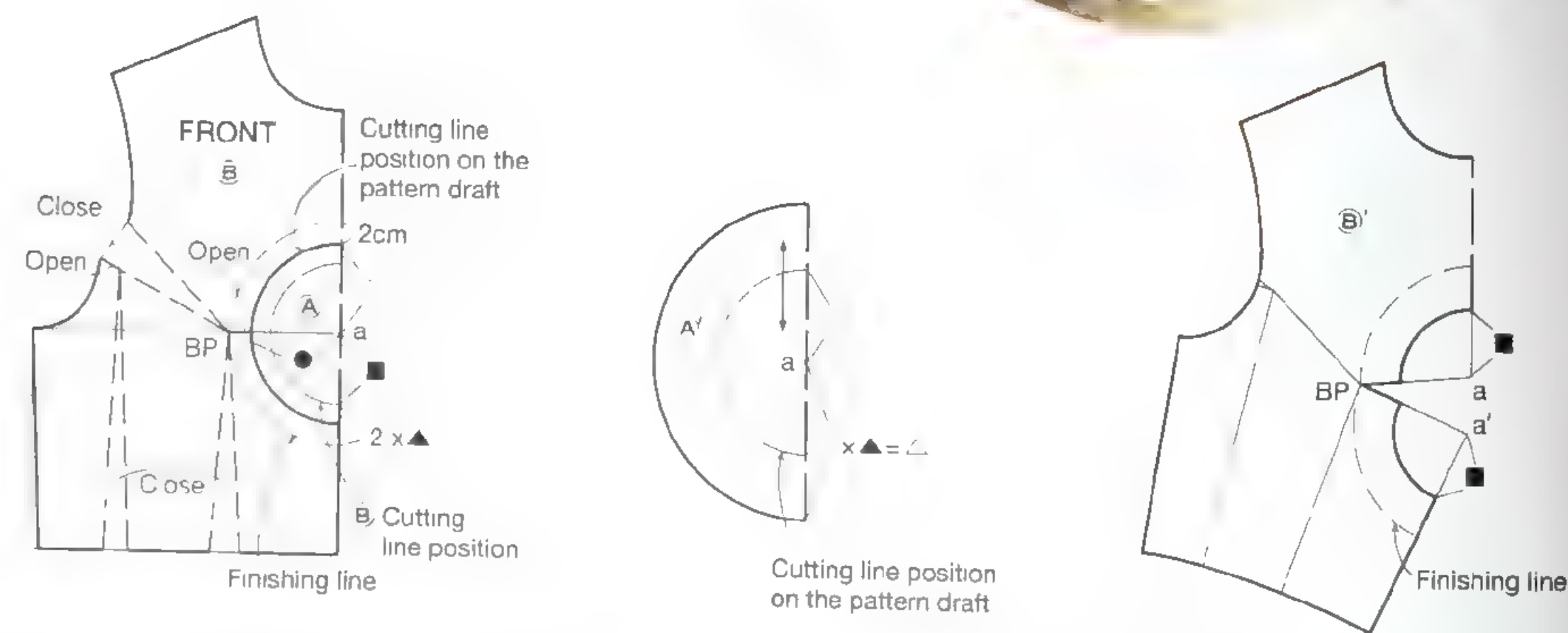


9 Sew together (A') and (B').

10 Sew the shirring to fill the gaps in the circle with the same size stitch and the same kind of density as the trial stitch, but there's no need to get too hung up about it. Once you've done the shirring, you'll be able to bring the fabric in by pulling slightly from the wrong side, and the fact that you're using elastic yarn gives you the flexibility to tweak things. I came up with the idea shown in the drawing for stitching without letting the design line stand out.

Add shirring to the sloper (block)

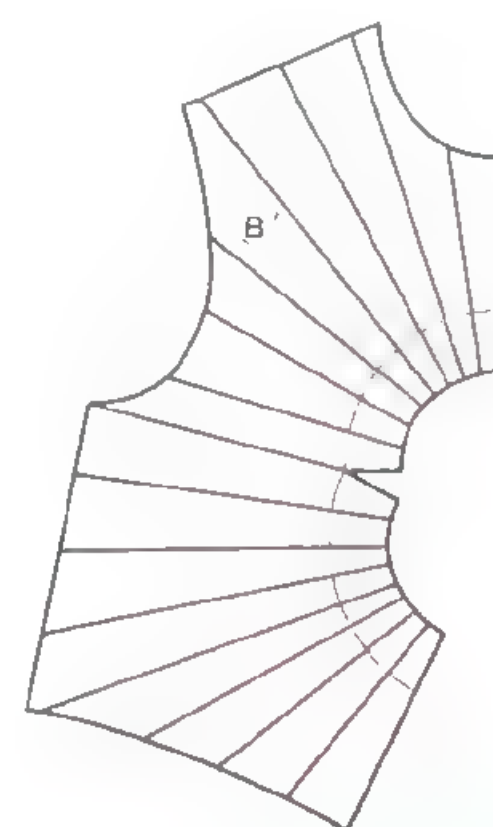
We will add the elastic shirring to the centre of the bodice without the neckline and armholes rippling up. And be careful to add a shirring stitch as shown on page 83 to prevent the design lines from standing out. We'll want to pay attention to the detail in order to show the design at its most natural.



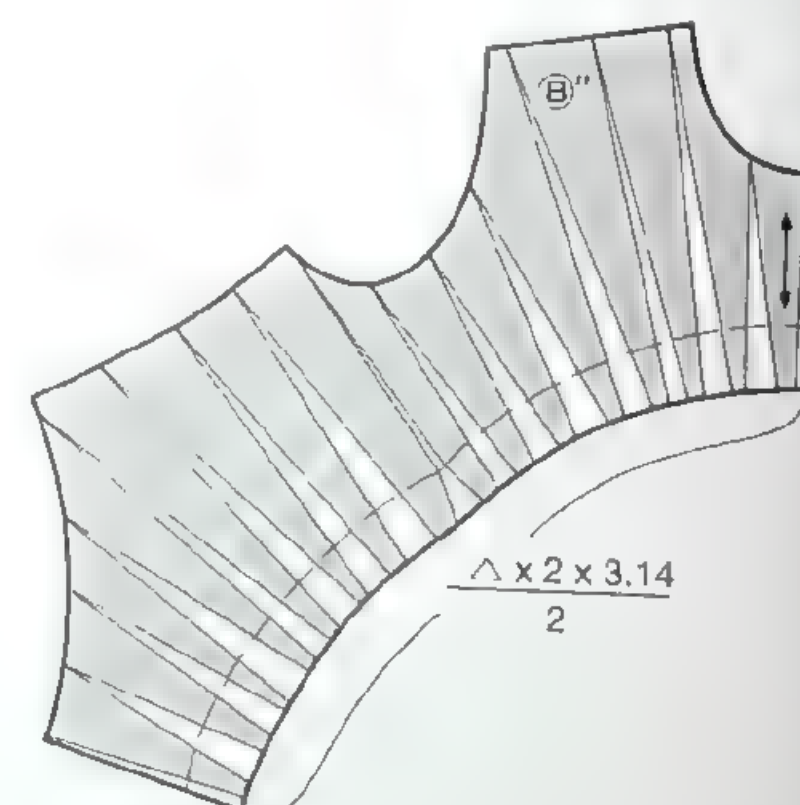
1 To a stitch the shirring using the garment fabric to determine the scaling factor. Call the scaling factor Δ . Mark the centre point a of the shirring on the centre front line at the intersection with the bust line. Call the distance from a to the bust point (BP) measurement \bullet . This makes the circle with radius \bullet into the finishing line of the shirring. Set the cutting line position on the drawing 2cm to the inside and make it a circle with radius \circ . Divide the pattern into parts (A) and (B) at the cutting line position. On panel (B), measure 2cm to the inside for the movement ($2 \times \Delta$). This gives a circle with radius \blacksquare cm. Close all the darts.

2 Draw (A). This gives a circle of radius $\circ \times \Delta = \triangle$, which we will call A' .

3 Close all the darts; a becomes a' .



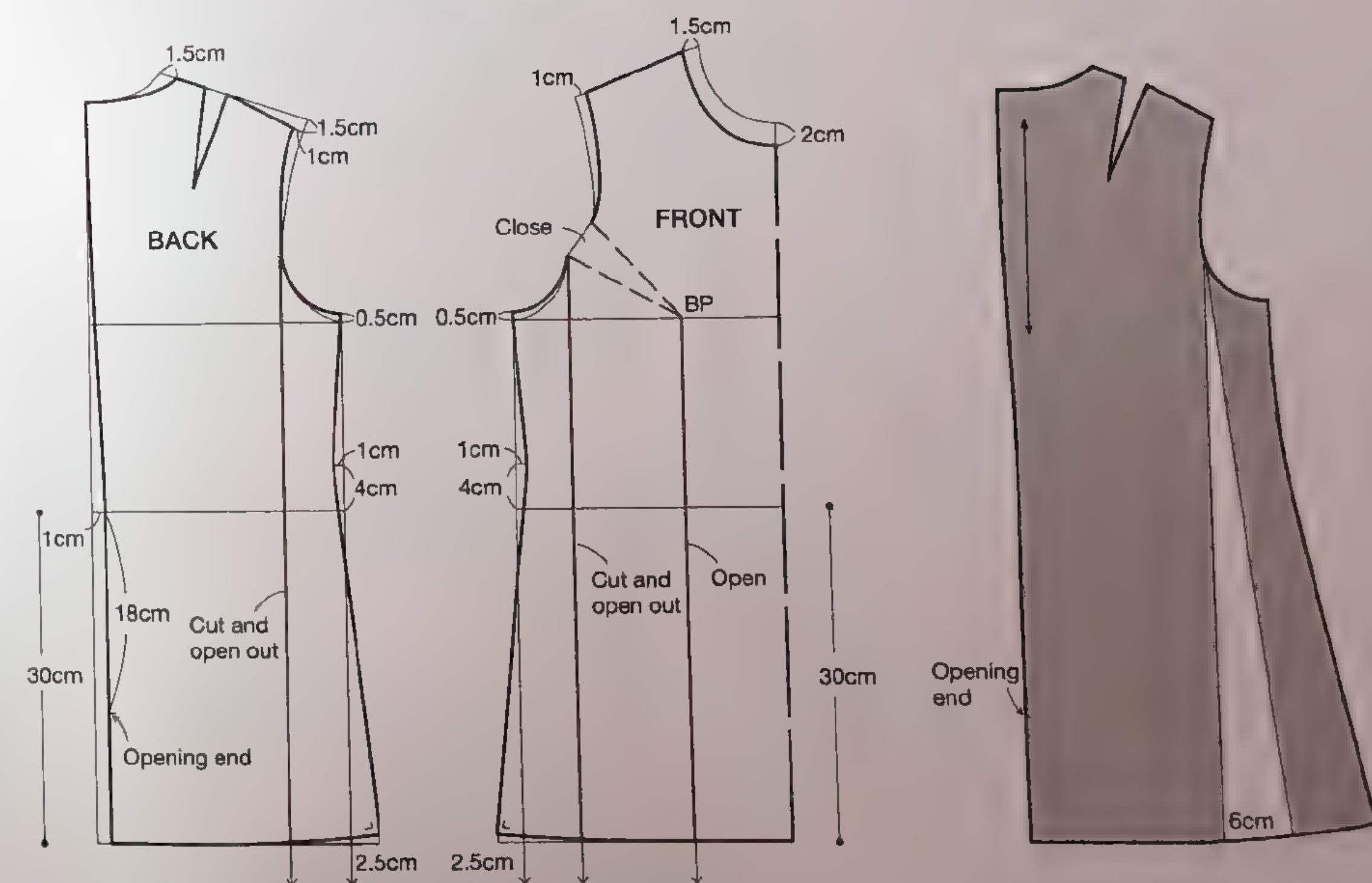
4 Draw the cutting and opening out lines radially



5 Cut and open out to a distance equal to half the circumference of (A'). (B') becomes (B''). Sew together (A') and (B'') and add the shirring.

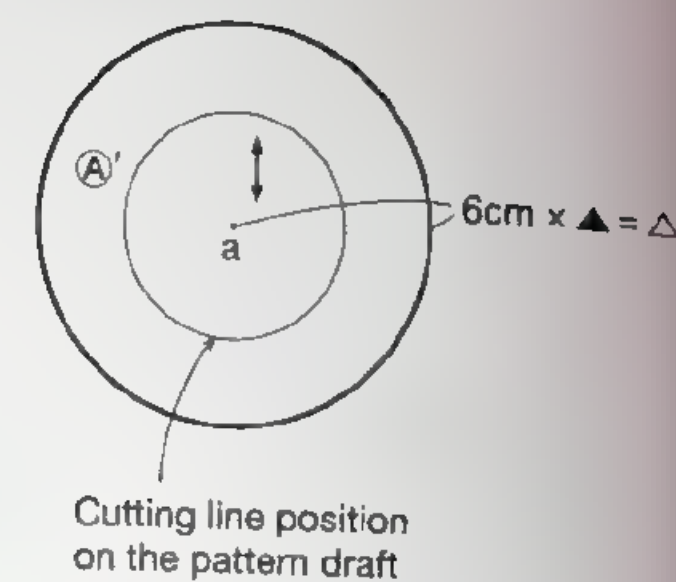
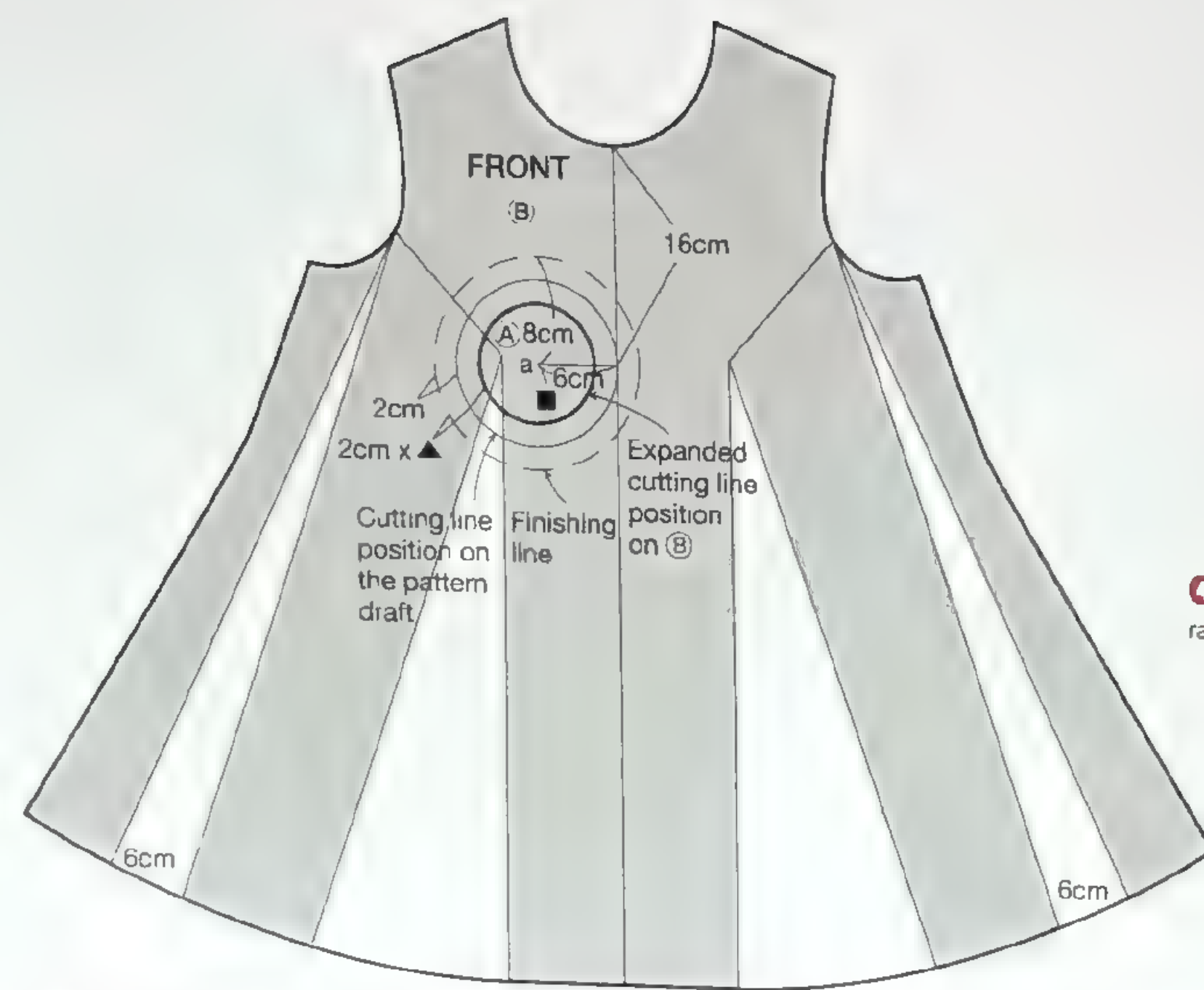
Shirred blouse with rippled hem

For a wearable use of the shirring technique, I made an asymmetrical blouse, in which the hem ripples down from the shirring on a corsage-like bust.



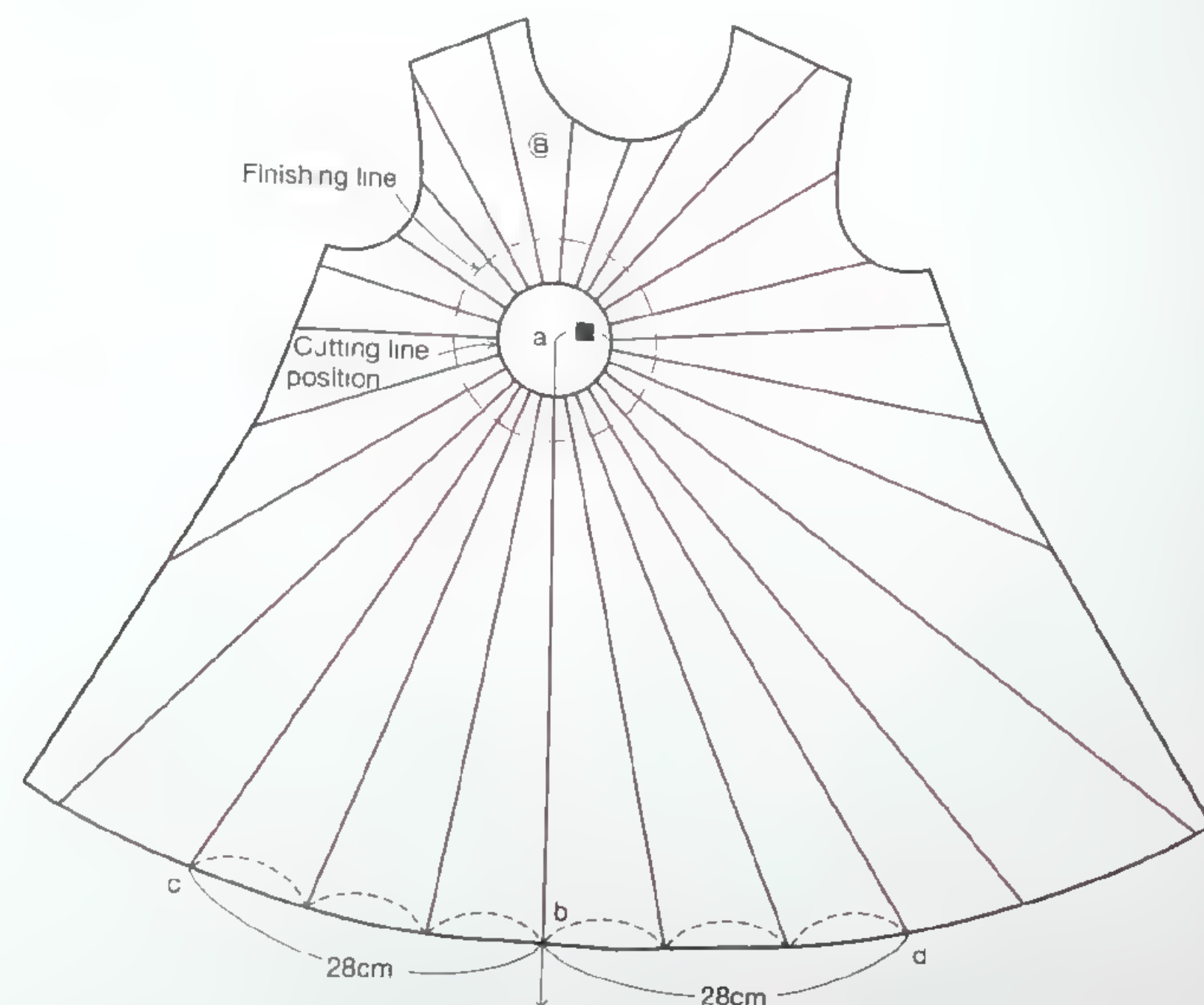
1 Draft the pattern for the blouse. Draw the cutting and opening out lines.

2 Cut and open out the back bodice.

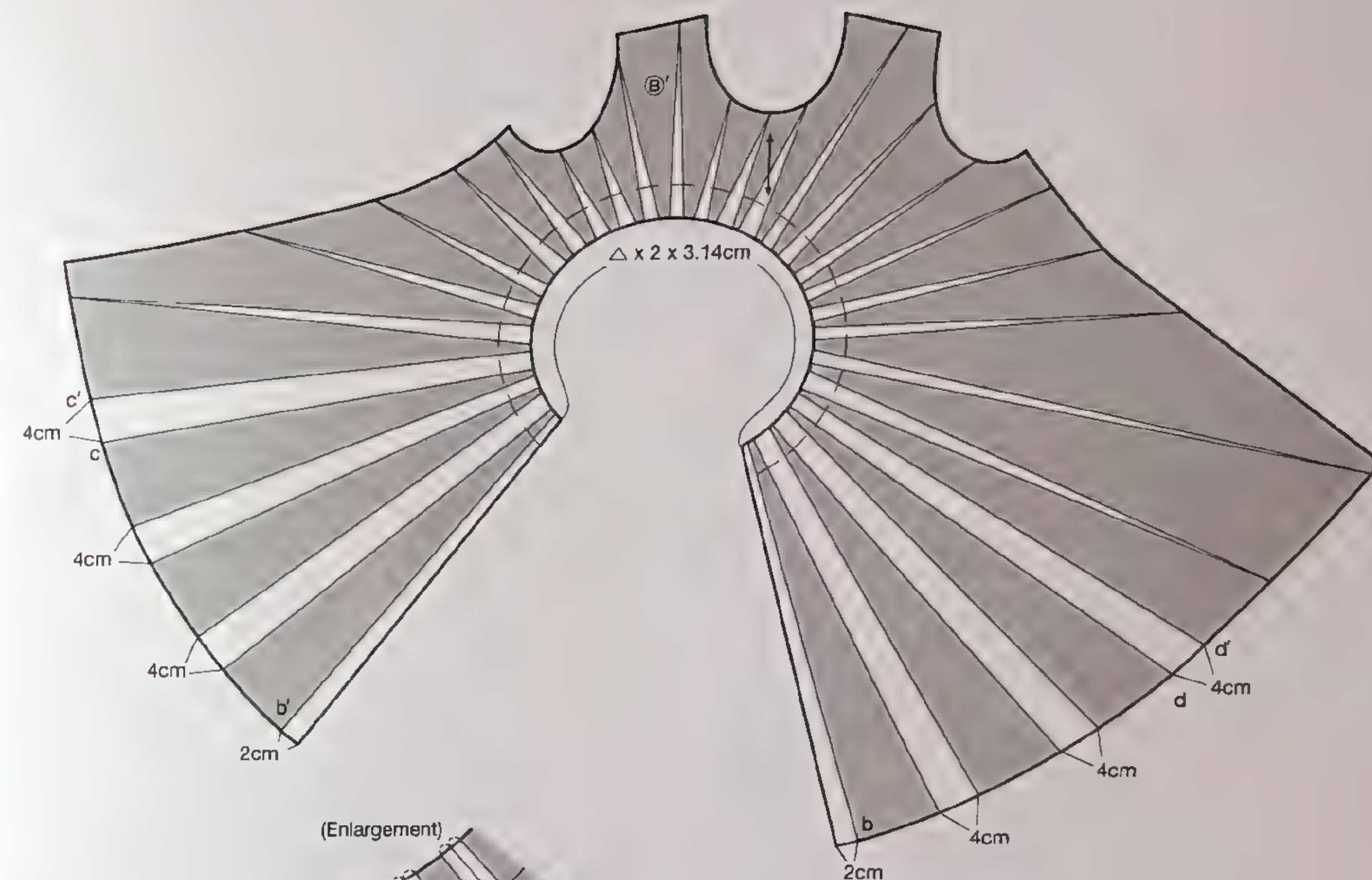


Now enlarge (A). This gives a circle with radius $(6\text{cm} \times \Delta = \Delta)$, which will become (A').

3 Trial stitch the shirring to determine the scaling factor. Call the scaling factor Δ . Trace the front bodice left and right and then cut and open out. Mark the centre point 'a' of the shirring. Draw a circle of radius 8cm around 'a'. This will be the finishing line of the shirring. Draw the design seam line on the drawing 2cm in from the finishing line. Divide the pattern into parts (A) and (B) at the design line. On (B), we will increase the 2cm allowance for movement, so move the design line $(2\text{cm} \times \Delta)$ inside. This gives a circle with radius $\blacksquare\text{cm}$.



5 Draw a vertical line from 'a' to the hem to make the seam. Mark 'b' on the hem line. Measure 28cm to the left and right of 'b' on the hem line, and mark points 'c' and 'd'. Divide the lines from 'c' to 'b' and 'b' to 'd' into three equal sections and draw the cutting and opening out lines that will open out completely. Draw the other cutting and opening out lines.



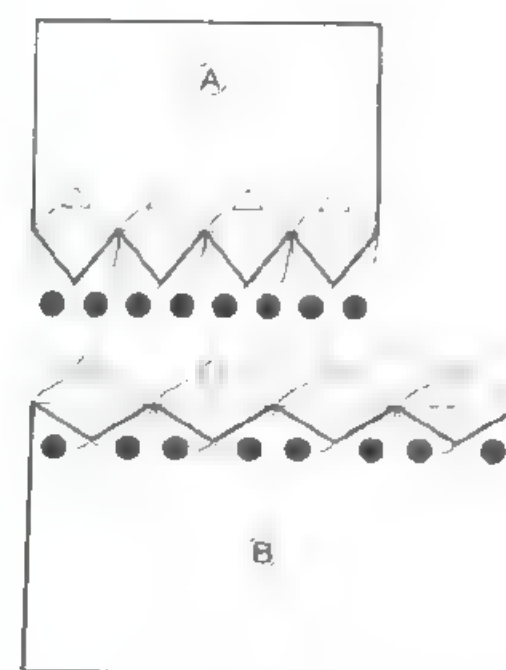
(Enlargement)

6 Cut and open out the edge where you will add the shirring to $\Delta \times 2 \times 3.14\text{cm}$. Also open out the hem between 'c', 'b', and 'd'. Opening out the hem makes it ripple up. (B) becomes (B'). Sew (A') and (B') together and add the shirring.

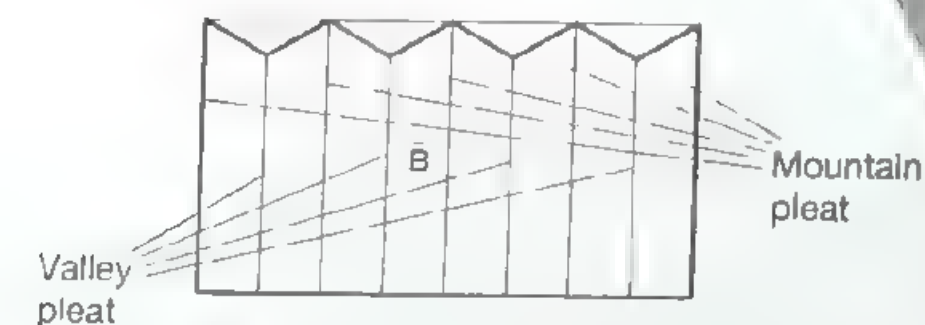
Serrated lines

When we sew together fabrics of different lengths, we adjust the design with gathers and tucks. If the differences in length are small, we mould the fabric, or ease or stretch it... I tried adjusting the lengths by serrating the seams and changing the angle of the serrations.

Basic technique



1 Panels A and B have different lengths. Divide the edge of B that you will sew together into four equal sections. With the divisions as pivot points, use a pair of compasses to mark out measurements of 1cm, and then draw the serrations. Divide A into equal sections in the same way, mark out measurements of 1cm, and draw the serrations. Sew the serrations of A and B together.

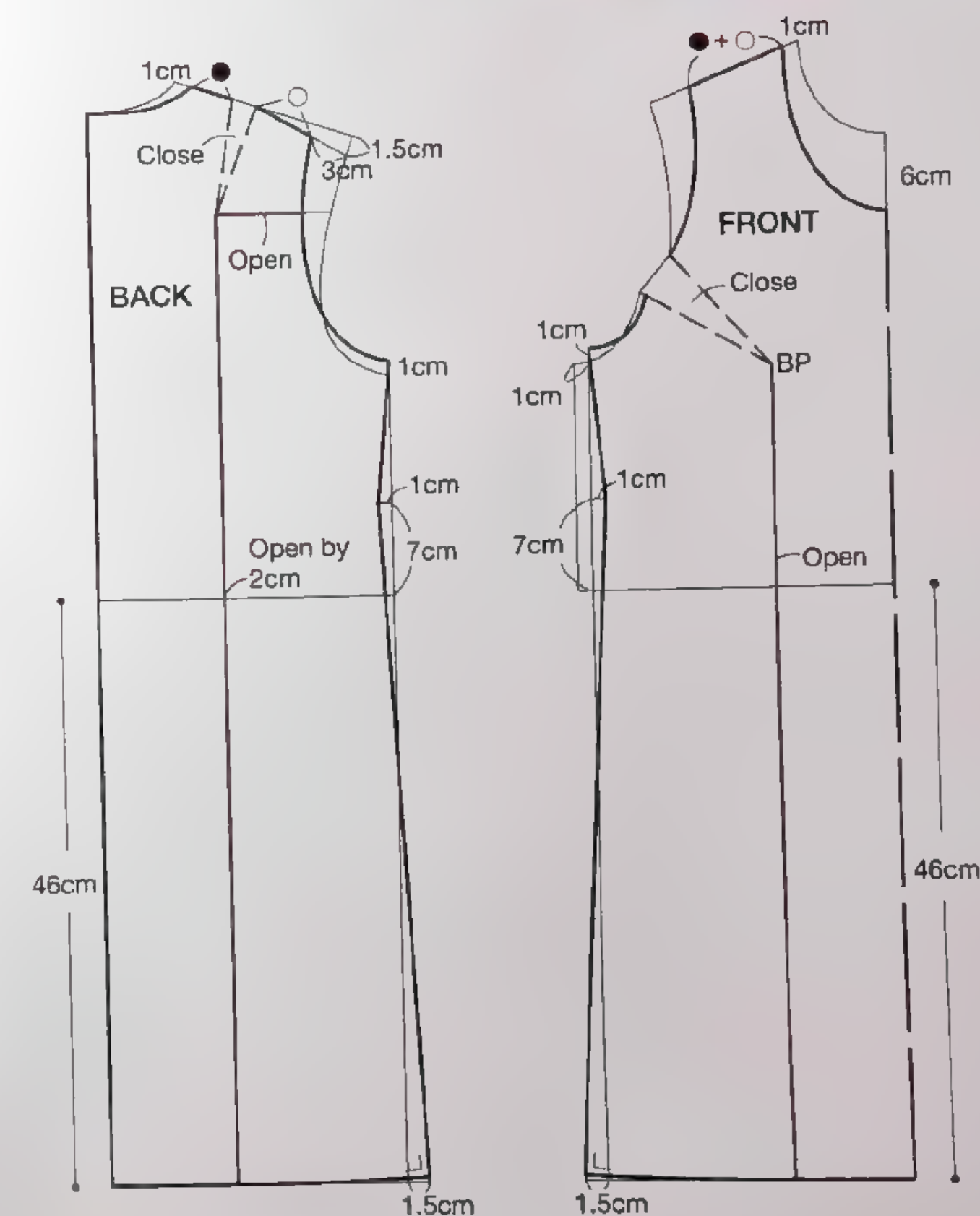


2 Here, I tried adding pleats.

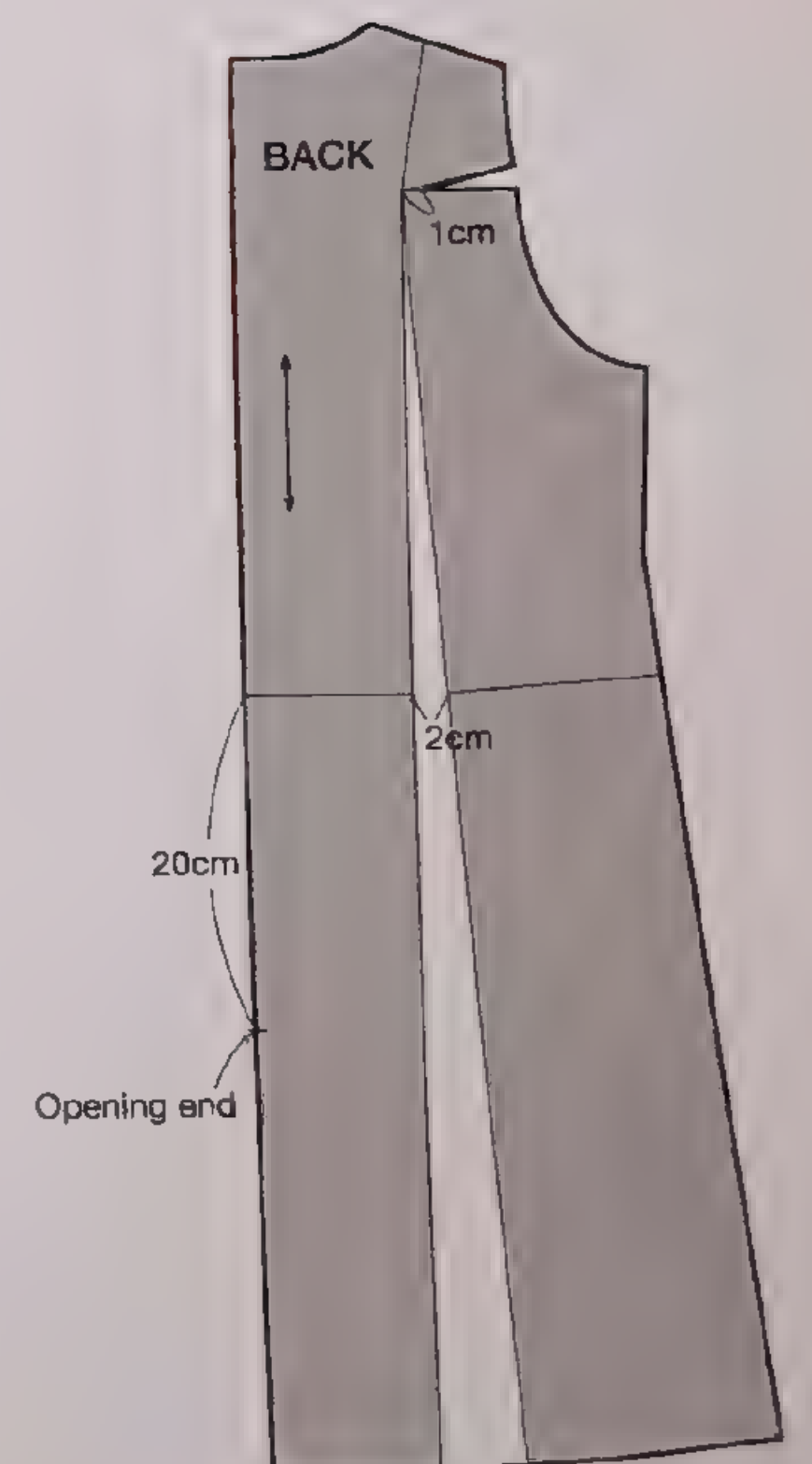


Serrated pleats

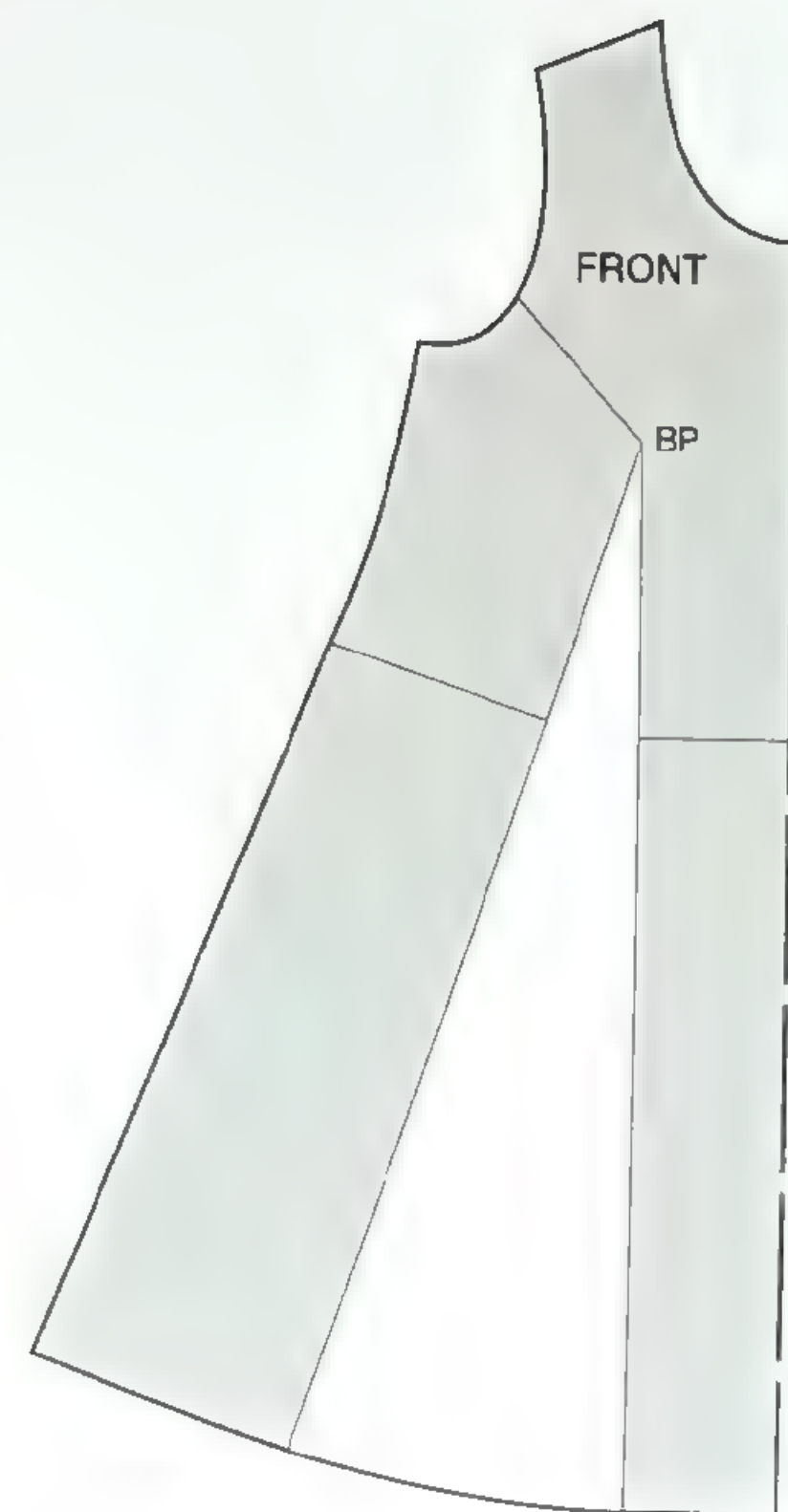
Let's try adding serrations to the skirt section of a dress. The serrated lines will give a more three-dimensional shape to the pleats.



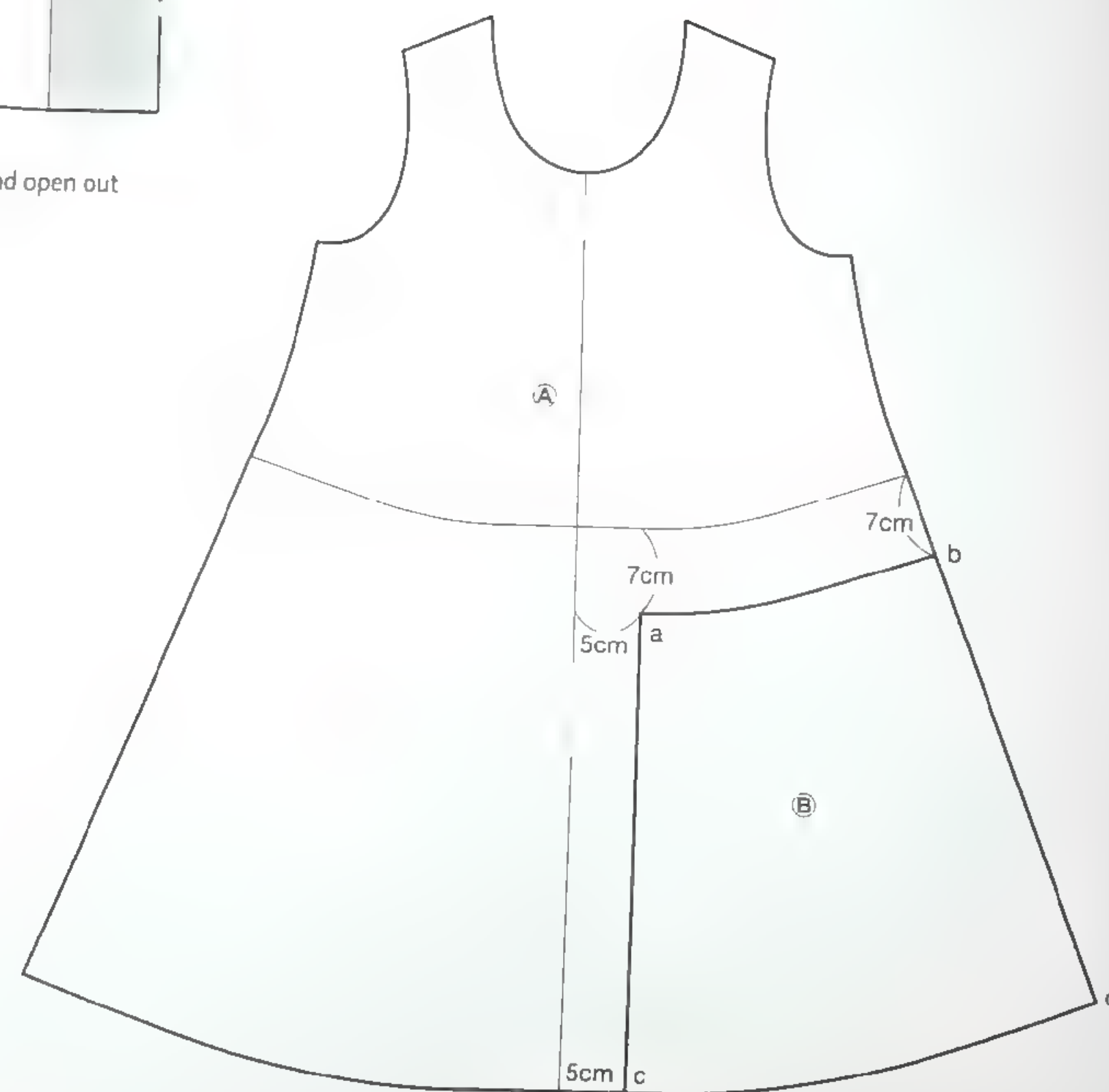
1 Draft the pattern for the dress.



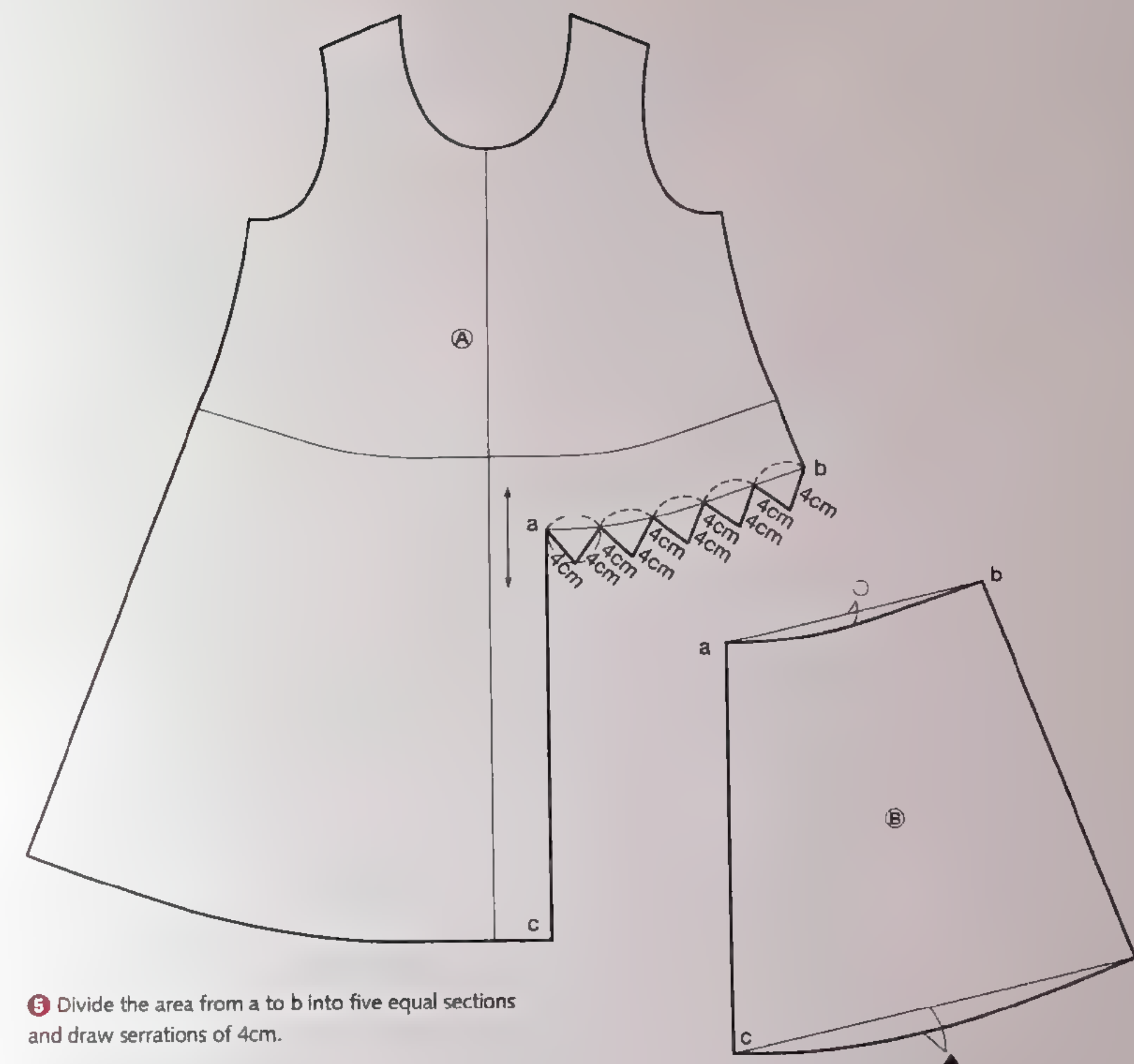
2 Close the shoulder dart. Cut and open out to 2cm at the waist and move the remaining dart to the armhole.



3 Close the armhole dart and cut and open out from the bust point (BP) to the hem.

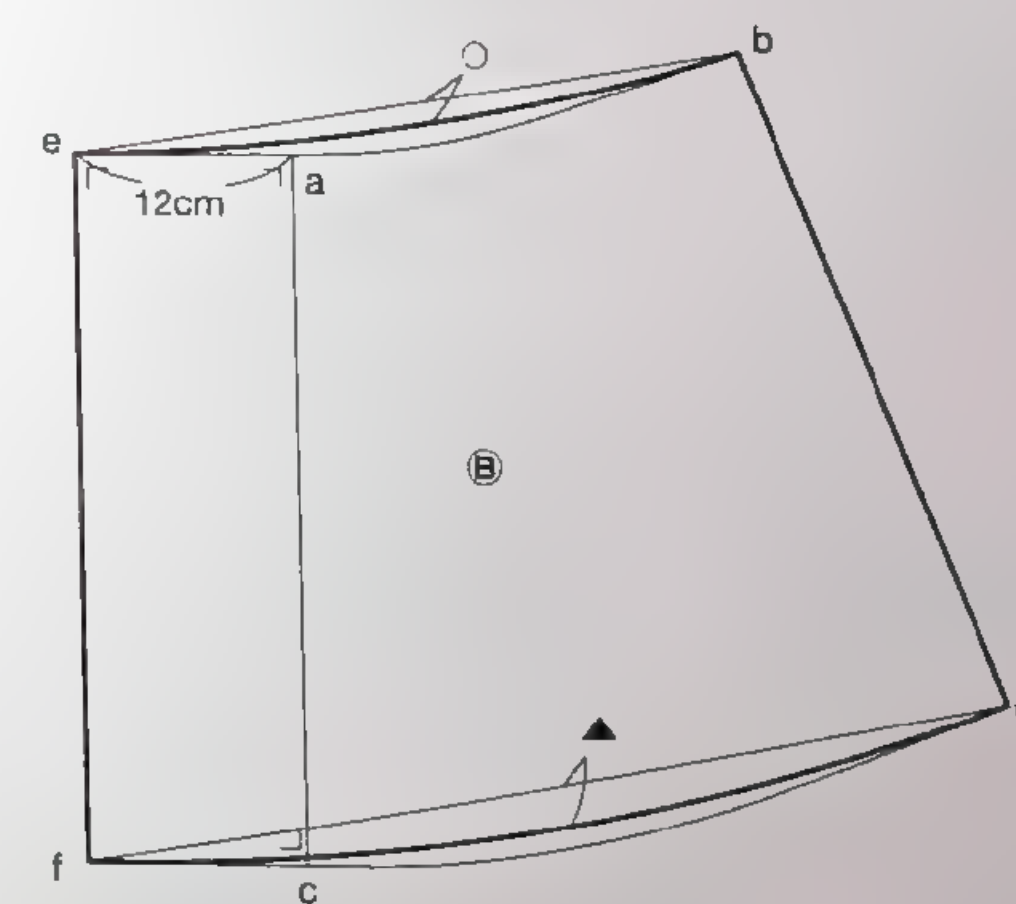


4 Copy the pattern in 3 to make the full front dress pattern. Make the design seam on the left skirt section and divide into panels A and B. Mark a, b, c, and d.

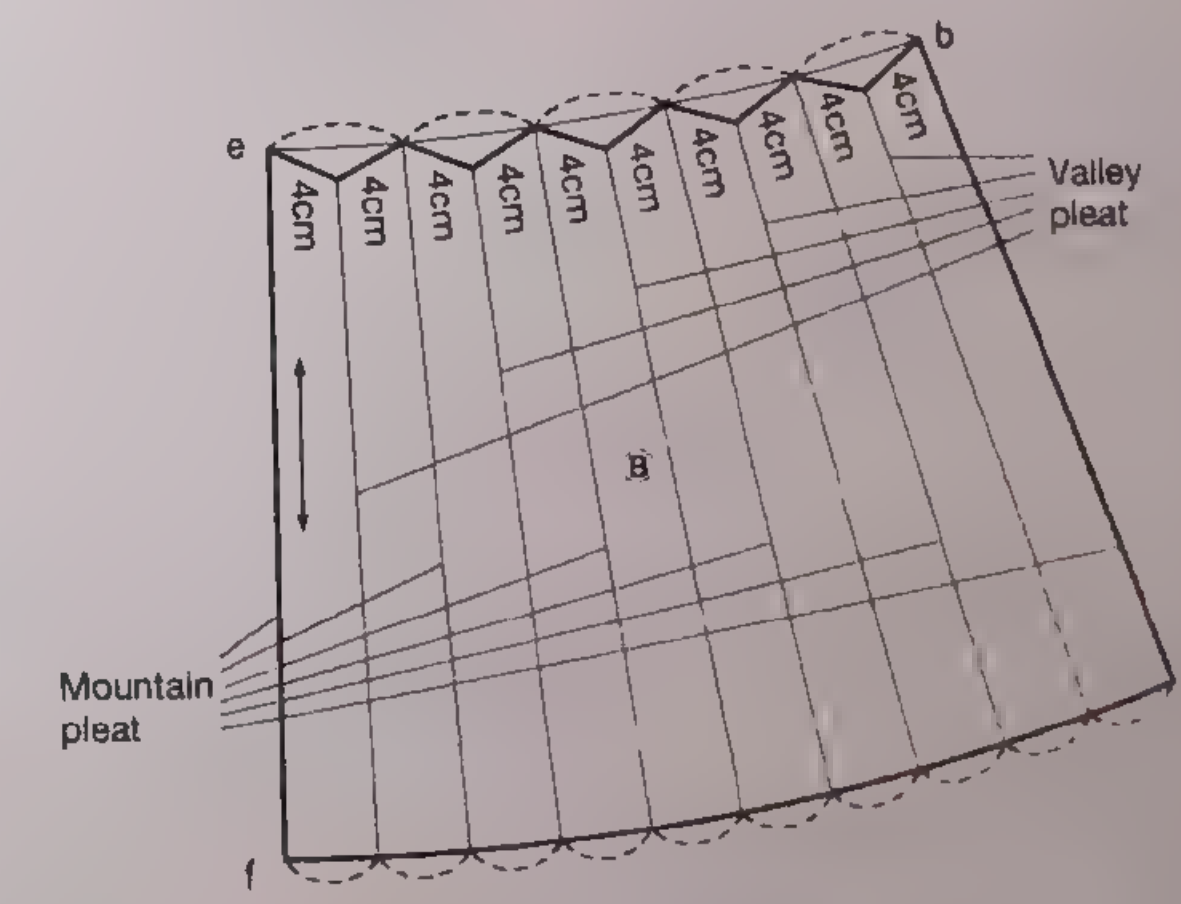


5 Divide the area from a to b into five equal sections and draw serrations of 4cm.

6 Draw a straight line connecting a and b and determine measurement O. Connect c to d and determine A.



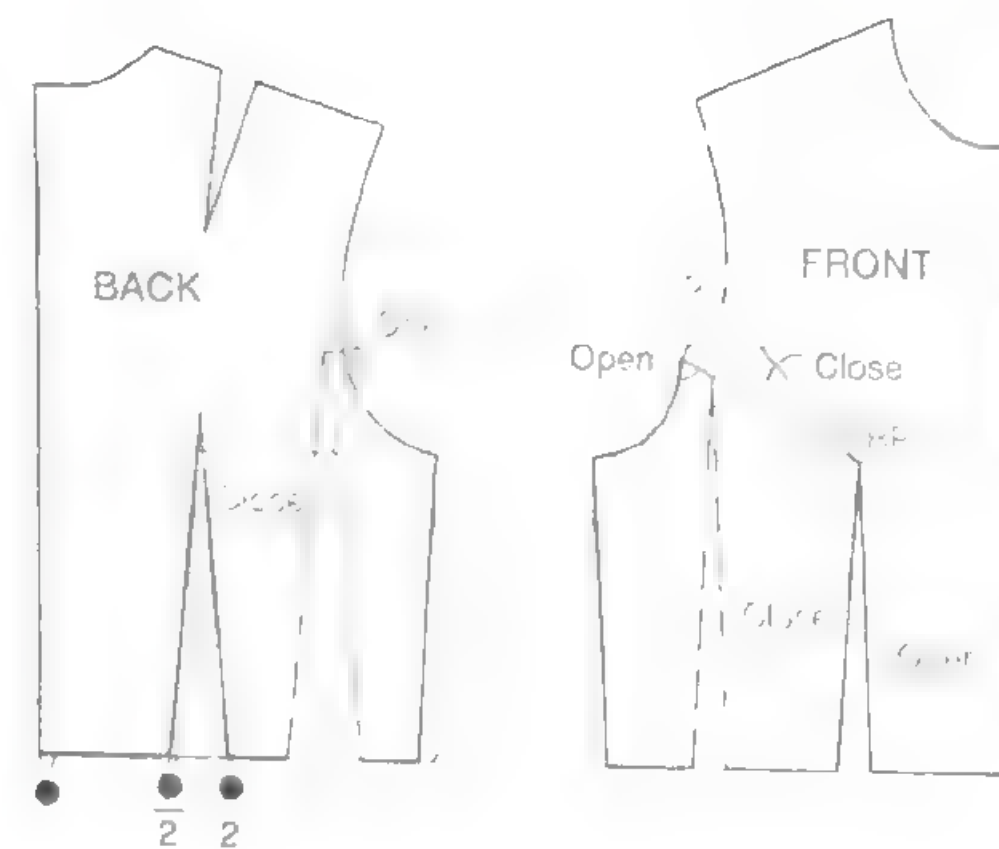
7 Mark a point 12cm horizontally from a and call it e. Mark a point 12cm horizontally from c and call it f. Draw a straight line connecting e and b, measure O, and draw the curve. Draw a straight line connecting f and d, measure A, and draw the curve.



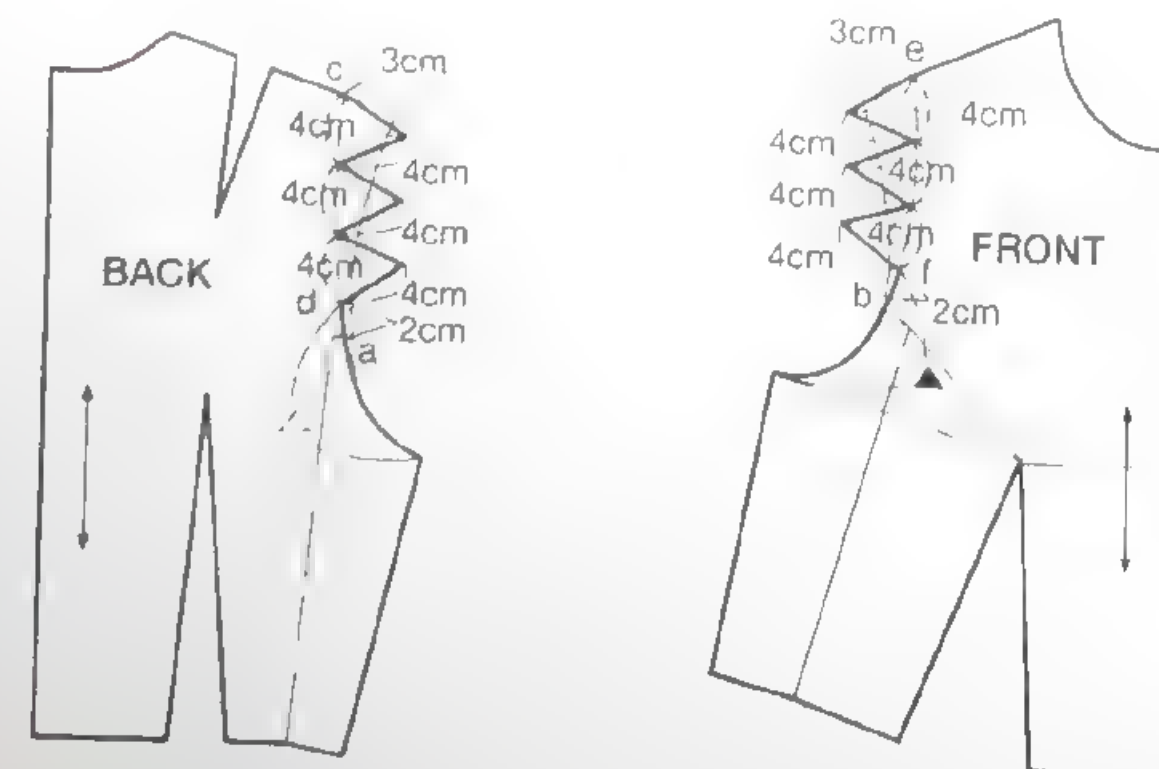
8 Divide the area from e to b into five equal sections and draw serrations of 4cm. Divide the area from f to d into ten equal sections. Connect the dividing points with the points of the serrations.

Leg of mutton sleeve with serrated lines

I tried making a puff sleeve with serrations rather than the more usual gathers. The sweetness disappears, and our puff sleeve is sharper

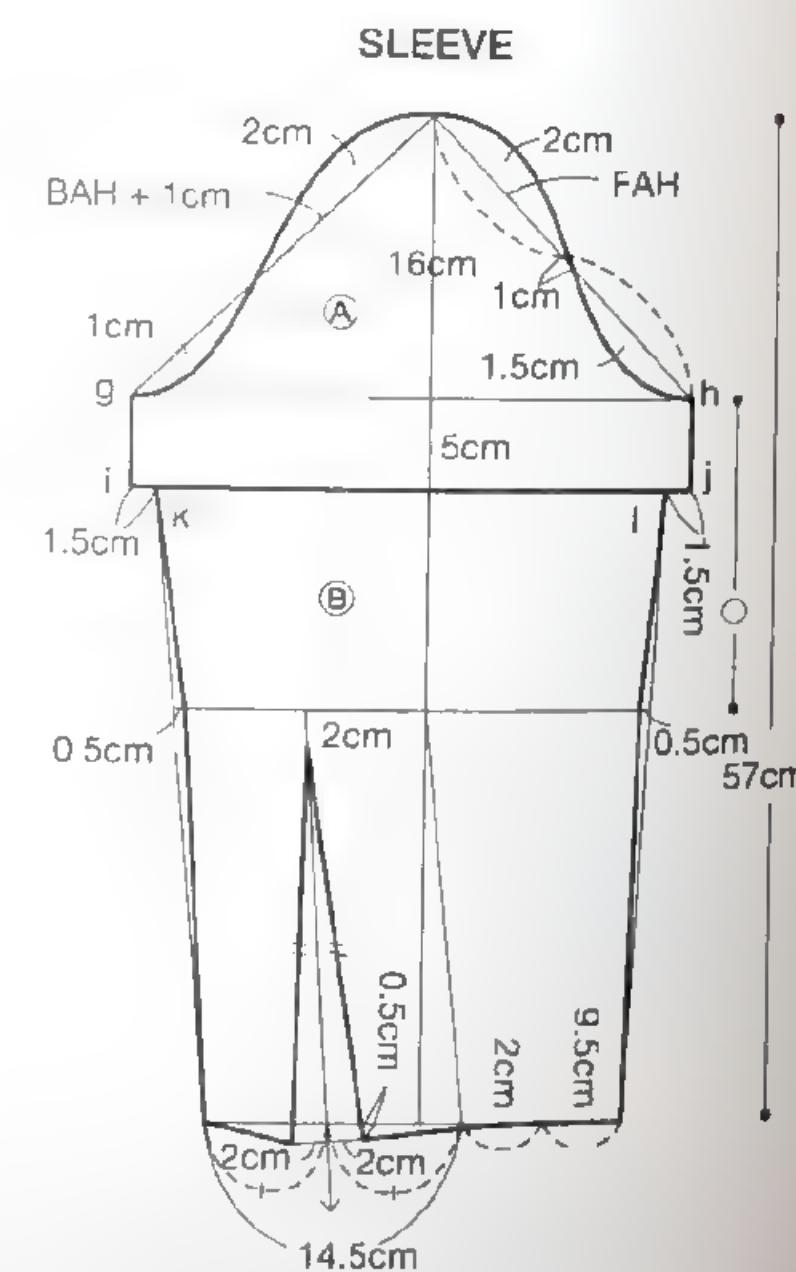


1 Move the darts as explained on page 24. Mark a and b

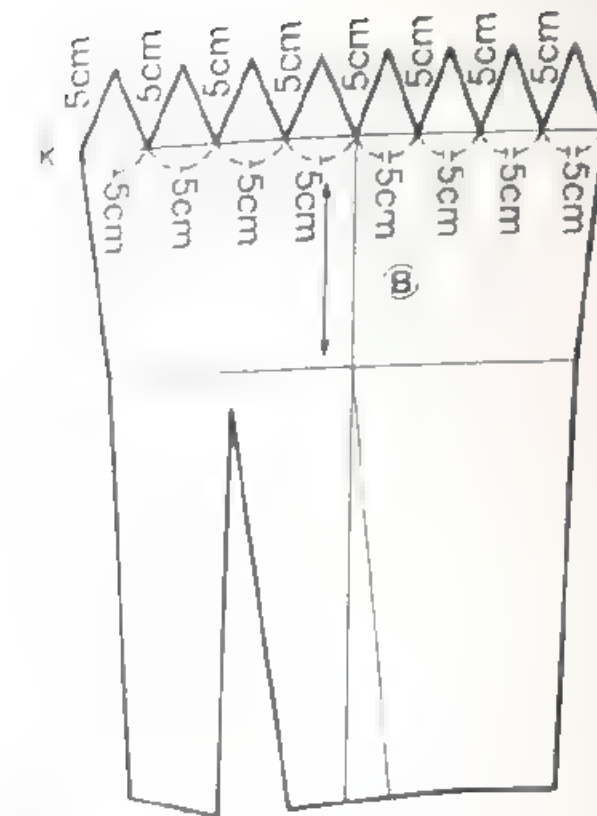


2 Mark c on the shoulder tip. Mark d on the sleeve setting line 2cm toward the shoulder from a. Divide the area from c to d into three equal sections. Draw serrations of 4cm from the dividing points. Call the distance from the bottom of the armhole to d measurement Δ .

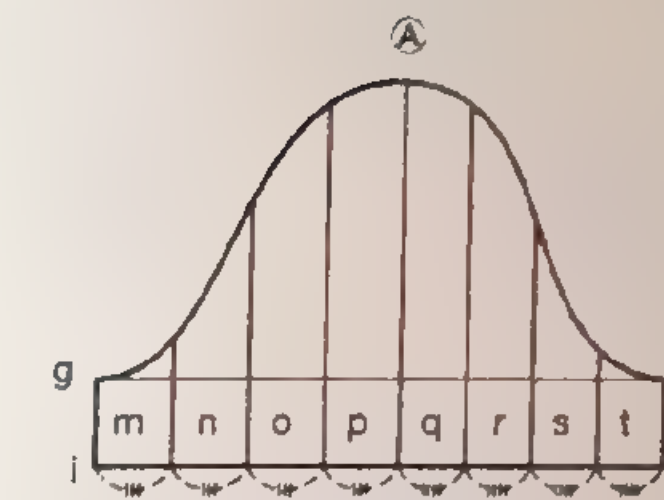
3 Mark e and f in the same way. Mark the serrations in the same way. Call the distance from the bottom of the armhole to f measurement Δ .



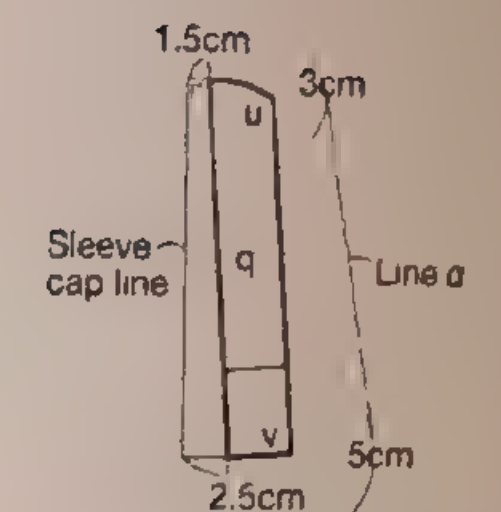
④ Draft the pattern for the sleeve. Divide into panels A and B. Mark g, h, i, j, k, and l.



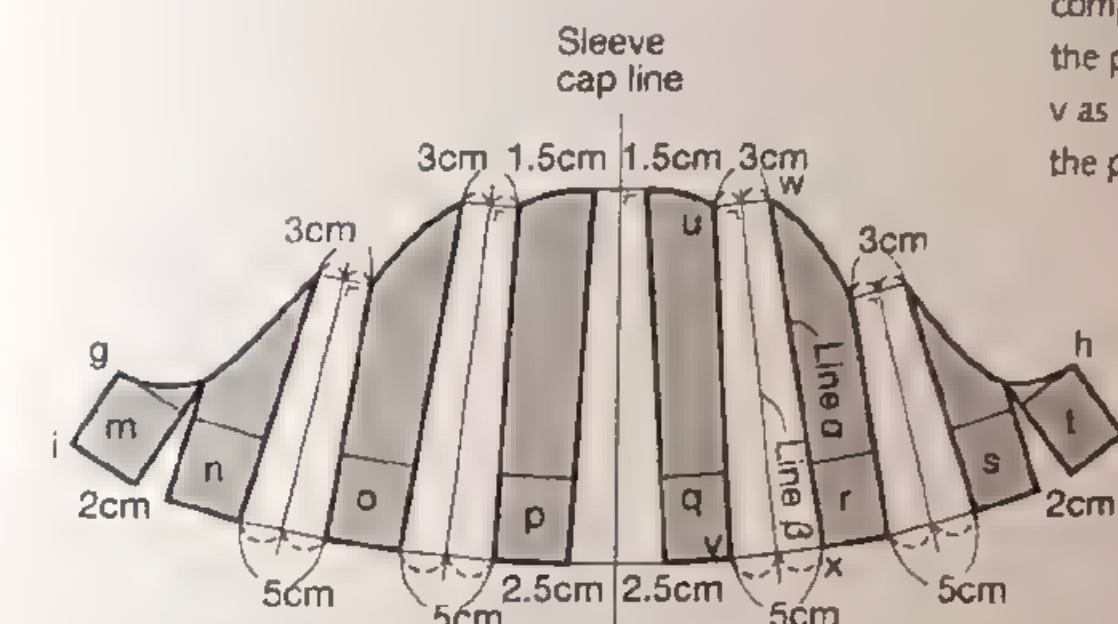
Divide the two areas from k to l into four equal sections at both front and back. Draw serrations of 5cm each from the dividing points.



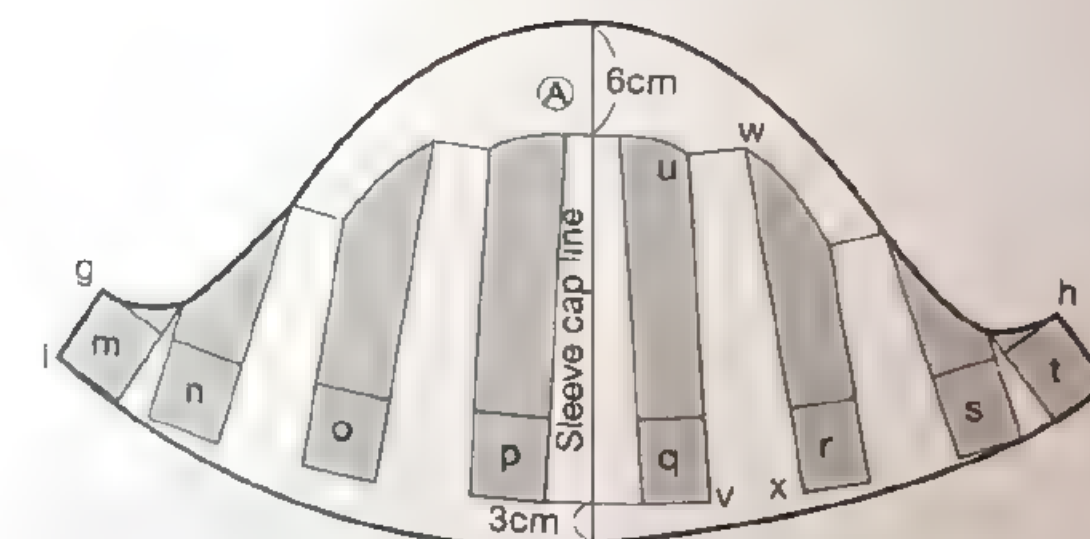
6 Mark the cutting and opening out lines on
A. Divide the cutting and opening out lines
into four equal sections at both front and
back, and mark m, n, o, p, q, r, s, and t.



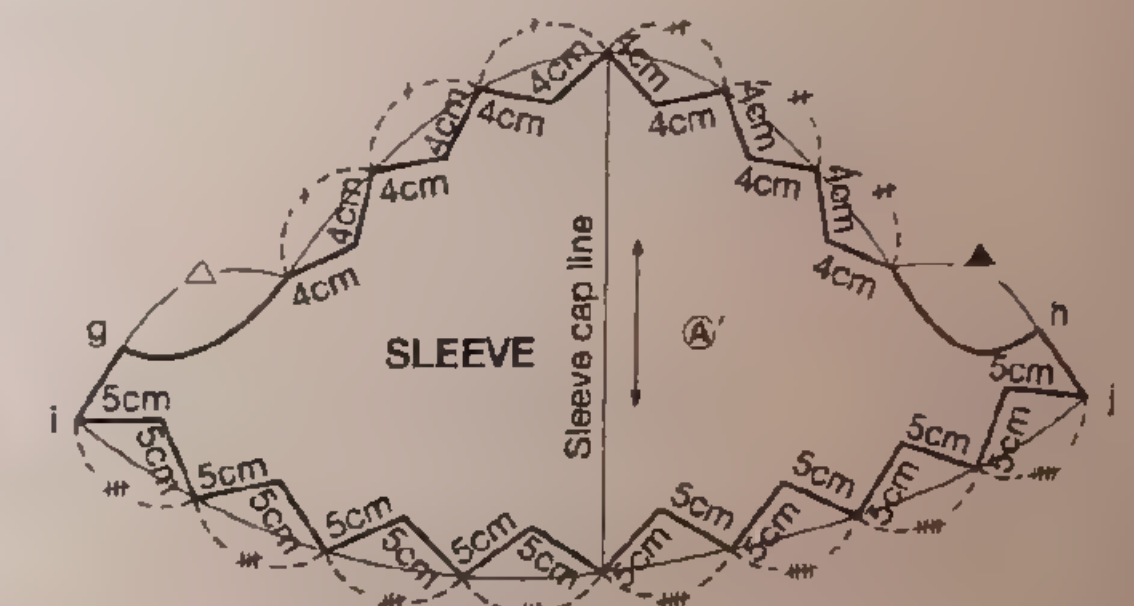
7 I will explain how to cut and open out the fabric using point q as an example. Draw a vertical line for the sleeve cap. Copy q to the right of this line, 1.5cm away at the top and 2.5cm away at the bottom. Using a pair of compasses, mark a distance of 3cm with u as the pivotal point. Mark a distance of 5cm with v as the pivotal point. Draw a line connecting the points that meet the arcs and call it line a



8 Draw lines connecting line u to v and line α , divide those lines into two equal sections, and draw the line β connecting their mid-points. Draw a perpendicular line from point u to line β . Extend the perpendicular and mark its intersection with line α as point w . Mark x in the same way. Copy r based on w and x . Mark n , o , p , and s in the same way. Cut and open out m and t by 2cm.



① When we add serrations, the length of the panels gets shorter because the angle of the serrations is smoothed out. ② does not have enough length, so we will add a 6cm sleeve cap.

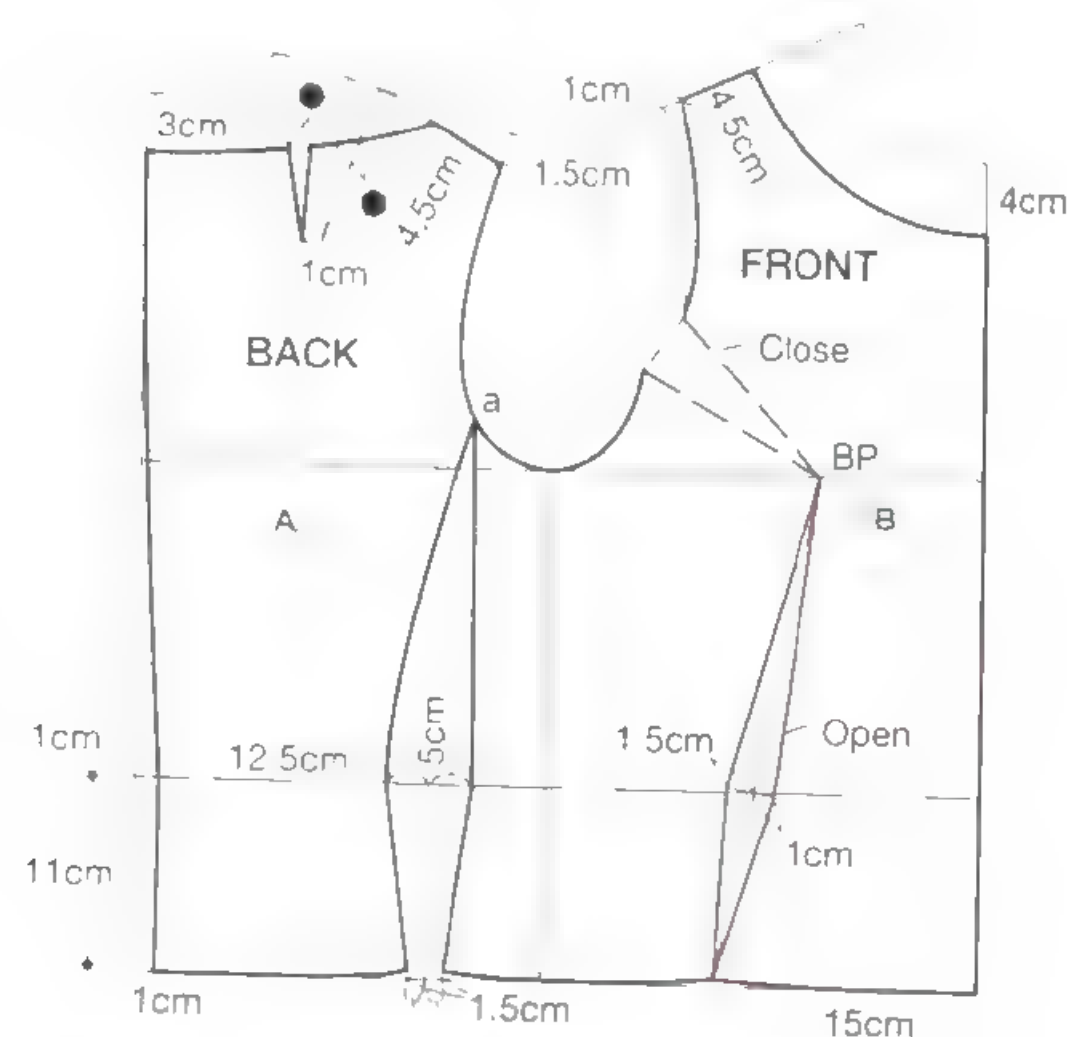


⑩ Measure \triangle from g and divide the area from that point to the sleeve cap line into three equal sections. In the same way, measure \blacktriangle from h and divide the area from that point to the sleeve cap line into three equal sections. Draw serrations of 4cm. On the sleeve opening, divide the section from i to the sleeve cap line into four equal sections. Divide the section from j to the sleeve cap line into four equal sections. Draw serrations of 5cm from the dividing points. \textcircled{A} becomes \textcircled{A}' .

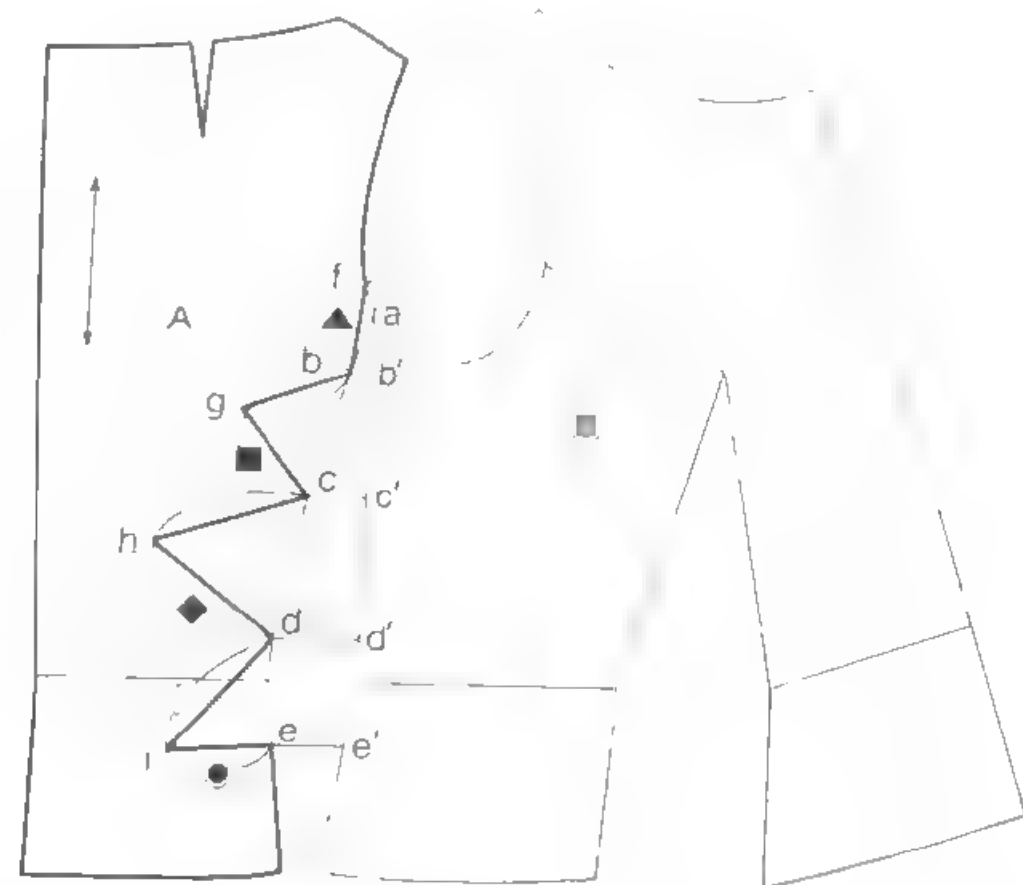
Moulding with serrated lines

The design lines on the back bodice are where the garment is at its narrowest, so I chose to squeeze the design in quite a bit at the waist. There was only a slight difference in the length of the design lines on either side at the back.

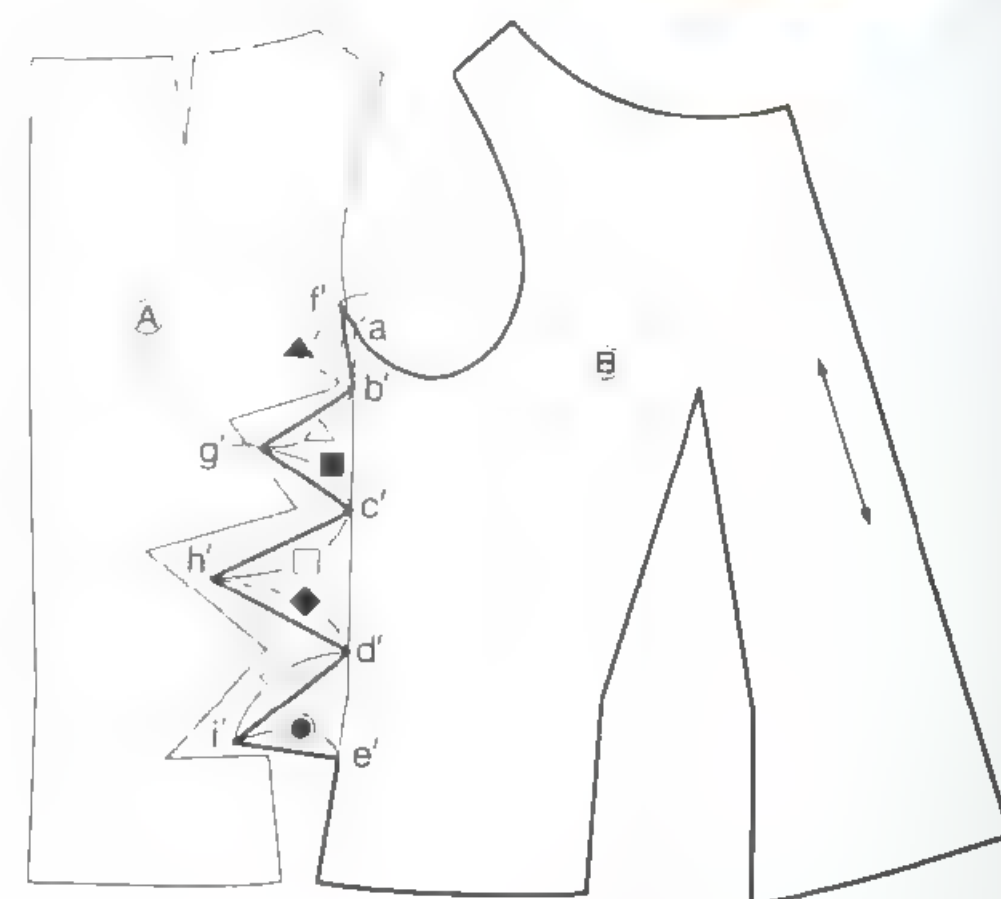
This is essentially a moulding process, but we will try sewing the pieces together at the serrated design lines.



1 Draft the pattern for the bodice. On the back, move the shoulder dart to the neckline. Mark a. Divide into panels A and B.



2 Draw the serrations on the design line on A as you like. Mark b, c, d, and e at the points in contact with the design line. Draw horizontal lines from b, c, d, and e and mark b', c', d', and e' at the points in contact with the design line on B. Mark f, g, h, and i at the tips of the serrations. Call the distance a to f measurement \bigcirc , and b to f measurement \blacktriangle . Call the other measurements \triangle , \blacksquare , \square , \blacklozenge , \lozenge , and \odot in the same way.



3 Draw the serrations on the design line on B. Measure distances \bigcirc from a and \blacktriangle from b', and mark f' at their intersection. Mark g', h', and i' in the same way. Connect the points with serrated lines.

The basis for pattern development is the Bunka-style sloper (block) for an adult woman

The Bunka-style sloper (block) created for the body shape of the modern Japanese woman is constructed three-dimensionally and fitted to the body with darts (bust pleat darts, back shoulder darts, and waist darts).

Bust (B), waist (W), and centre back length measurements are required to draw the sloper (block). The measurements for each part of the body are based on the bust measurement, and the size of each dart has been calculated from the bust and waist measurements. Each waist dart is calculated by the formula—bodice – (W/2 + 3)—where 3cm is the amount of ease added. Precise calculations are required for a neat fit, but drafting the patterns will be relatively easy if you refer to the quick reference table of measurements for different parts of the body. Pages 98 and 99 feature half-scale slopers (blocks) for each of the bust sizes (77, 80, 83, 86, and 89cm) for you to use.

Quick reference table of measurements for different parts of the body

Unit: cm

B measurement	Body width $\frac{B}{2} + 6$	A to BL $\frac{B}{12} + 13.7$	Back width $\frac{B}{8} + 7.4$	BL to B $\frac{B}{5} + 8.3$	Bust width $\frac{B}{8} + 6.2$	$\frac{B}{32}$	Front neckline width $\frac{B}{24} + 3.4 = \textcircled{a}$	Front neckline depth $\textcircled{a} + 0.5$	Bust pleat darts $(\frac{B}{4} - 2.5)$	Back neckline width $\textcircled{a} + 0.2$	Back shoulder darts $\frac{B}{32} - 0.8$
77	44.5	20.1	17.0	23.7	15.8	2.4	6.6	7.1	16.8	6.8	1.6
78	45.0	20.2	17.2	23.9	16.0	2.4	6.7	7.2	17.0	6.9	1.6
79	45.5	20.3	17.3	24.1	16.1	2.5	6.7	7.2	17.3	6.9	1.7
80	46.0	20.4	17.4	24.3	16.2	2.5	6.7	7.2	17.5	6.9	1.7
81	46.5	20.5	17.5	24.5	16.3	2.5	6.8	7.3	17.8	7.0	1.7
82	47.0	20.5	17.7	24.7	16.5	2.6	6.8	7.3	18.0	7.0	1.8
83	47.5	20.6	17.8	24.9	16.6	2.6	6.9	7.4	18.3	7.1	1.8
84	48.0	20.7	17.9	25.1	16.7	2.6	6.9	7.4	18.5	7.1	1.8
85	48.5	20.8	18.0	25.3	16.8	2.7	6.9	7.4	18.8	7.1	1.9
86	49.0	20.9	18.2	25.5	17.0	2.7	7.0	7.5	19.0	7.2	1.9
87	49.5	21.0	18.3	25.7	17.1	2.7	7.0	7.5	19.3	7.2	1.9
88	50.0	21.0	18.4	25.9	17.2	2.8	7.1	7.6	19.5	7.3	2.0
89	50.5	21.1	18.5	26.1	17.3	2.8	7.1	7.6	19.8	7.3	2.0

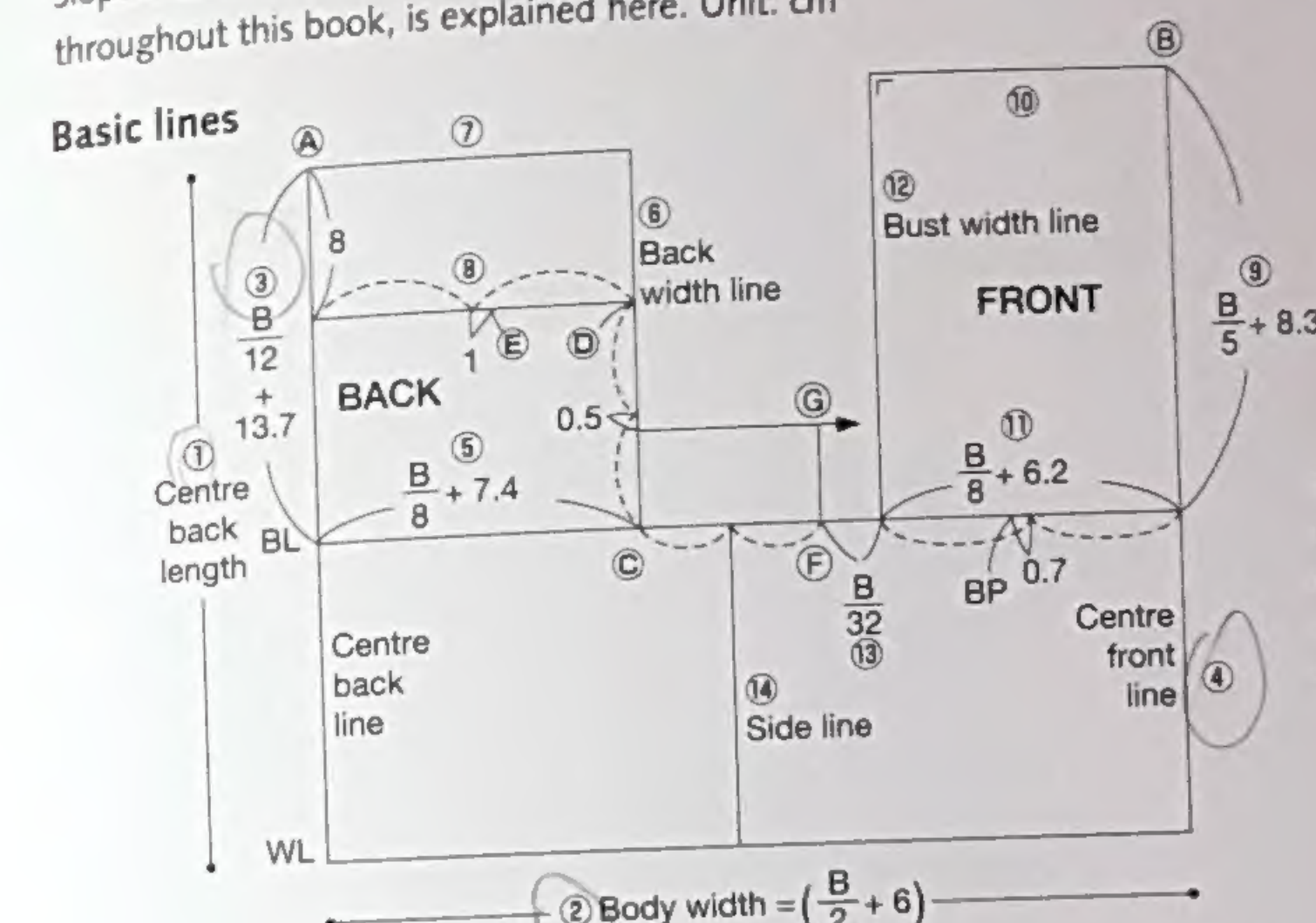
Quick reference table of waist dart measurements

Unit: cm

Total dart size 100%	f	e	d	c	b	a
	7%	18%	35%	11%	15%	14%
9	0.6	1.6	3.1	1	1.4	1.3
10	0.7	1.8	3.5	1.1	1.5	1.4
11	0.8	2	3.9	1.2	1.6	1.5
12	0.8	2.2	4.2	1.3	1.8	1.7
12.5	0.9	2.3	4.3	1.3	1.9	1.8

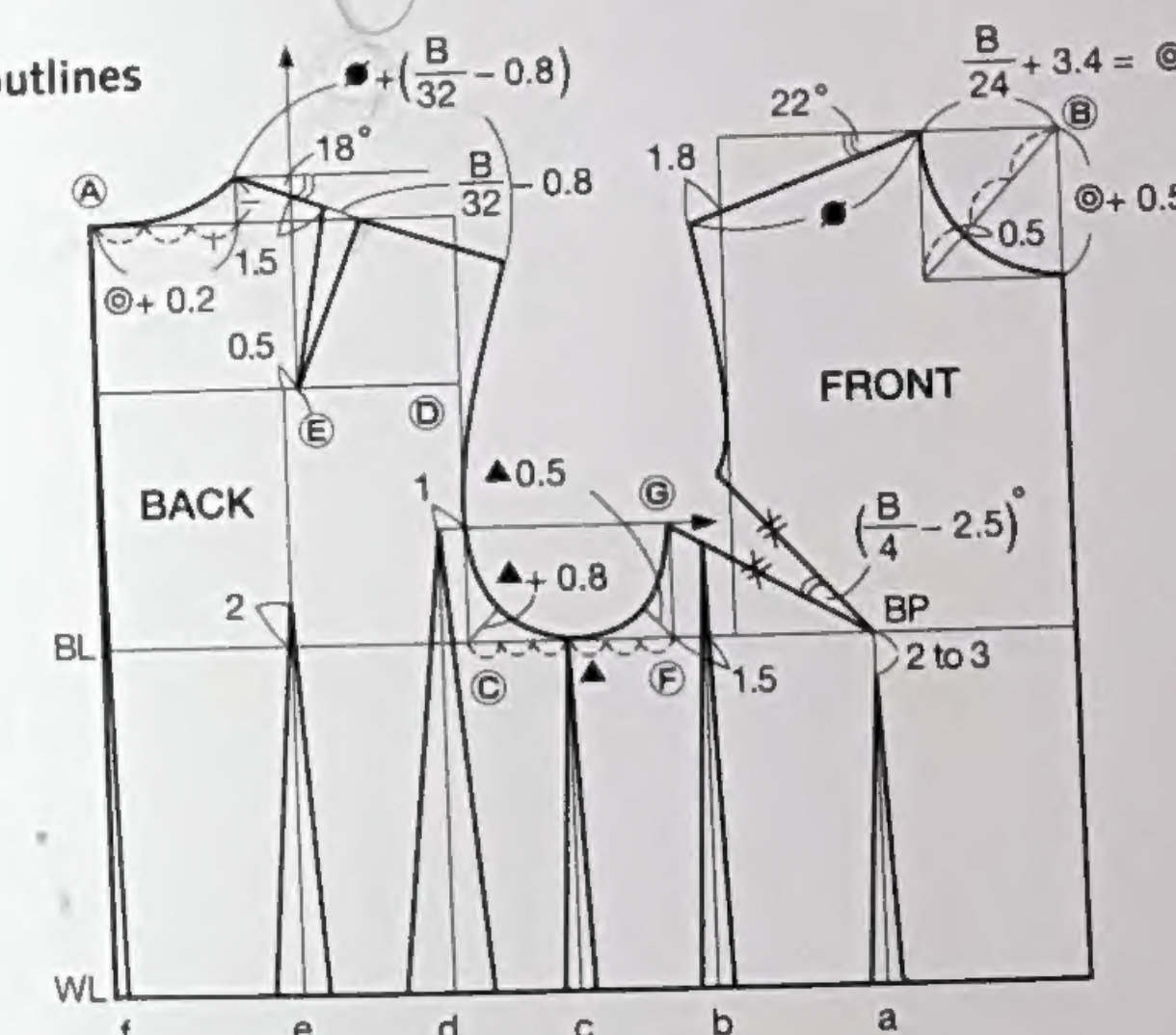
Making a drawing of a sloper (block)

Slopers (blocks) are made for both the bodice and the sleeve, but only the method of drawing a bodice sloper (block), used throughout this book, is explained here. Unit: cm



First draw the basic lines for the bodice. Accurately measure each part of the body and draw lines ① to ⑭ in that order. The numbers in the reference table are also arranged for reading in order from the left to help you work through the pattern drafting in that order.

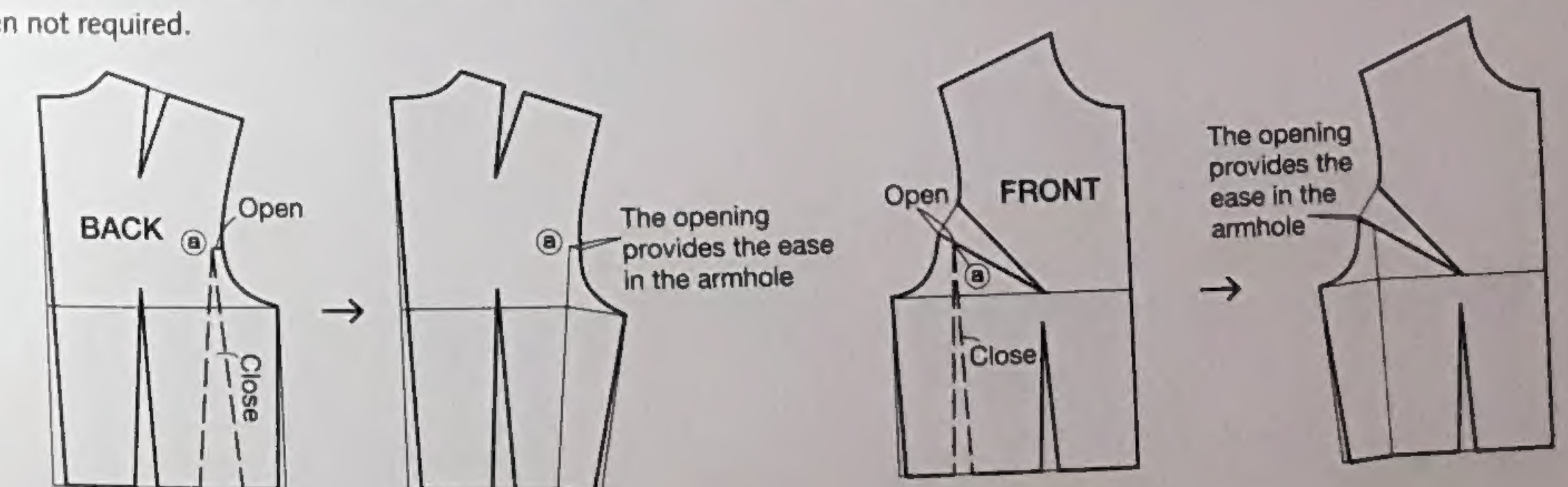
Curved outlines



After drawing the basic lines, draw the curved outlines of the neckline, shoulder, and armhole, and then finally the darts.

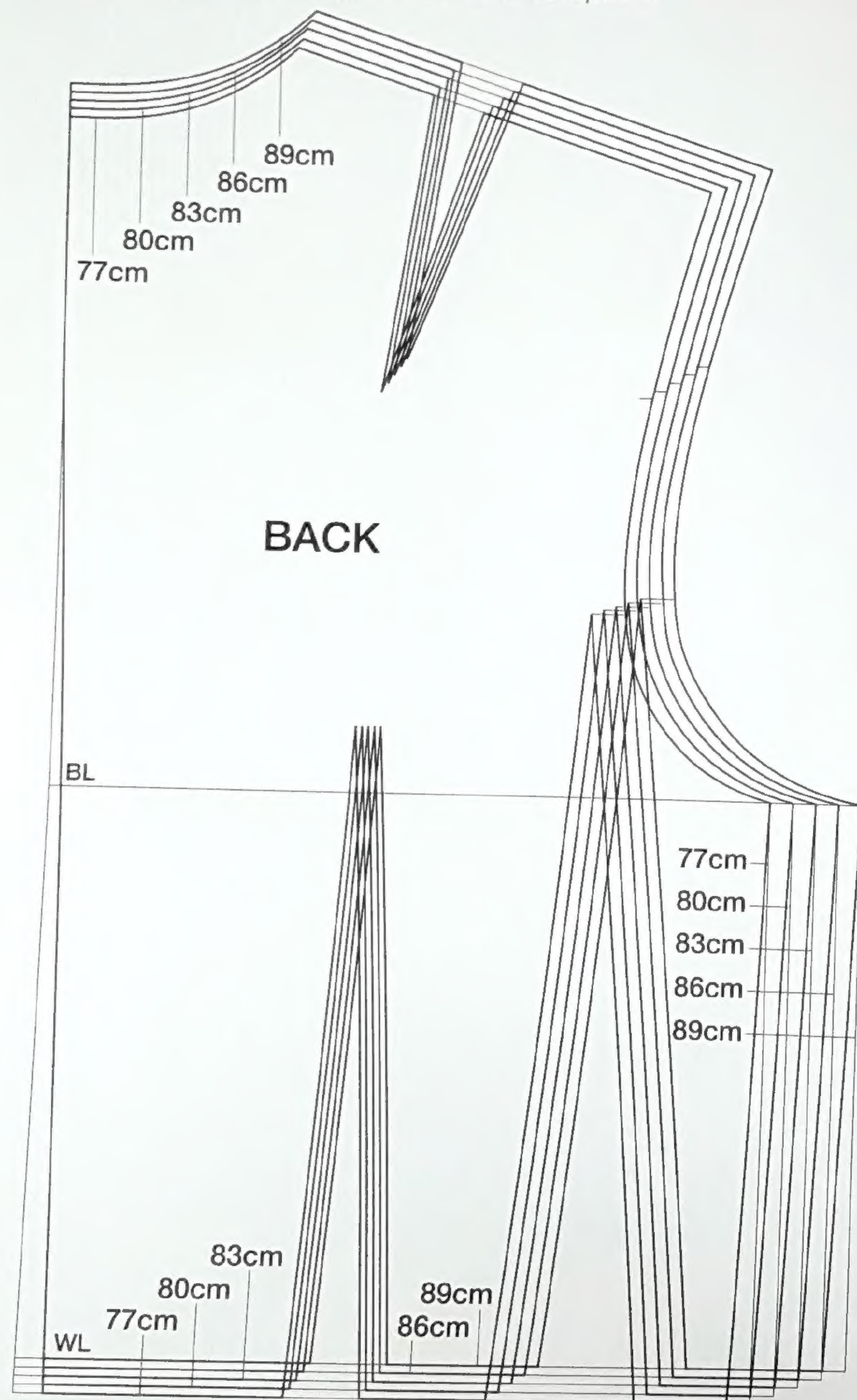
Tips for moving the darts

When you close the waist darts with ③ as the pivotal point, the armhole opens. As it is only a small amount, think of it as ease in the armhole. The waist darts on the sloper (block) are marked when used for pattern drafting but have been omitted when not required.

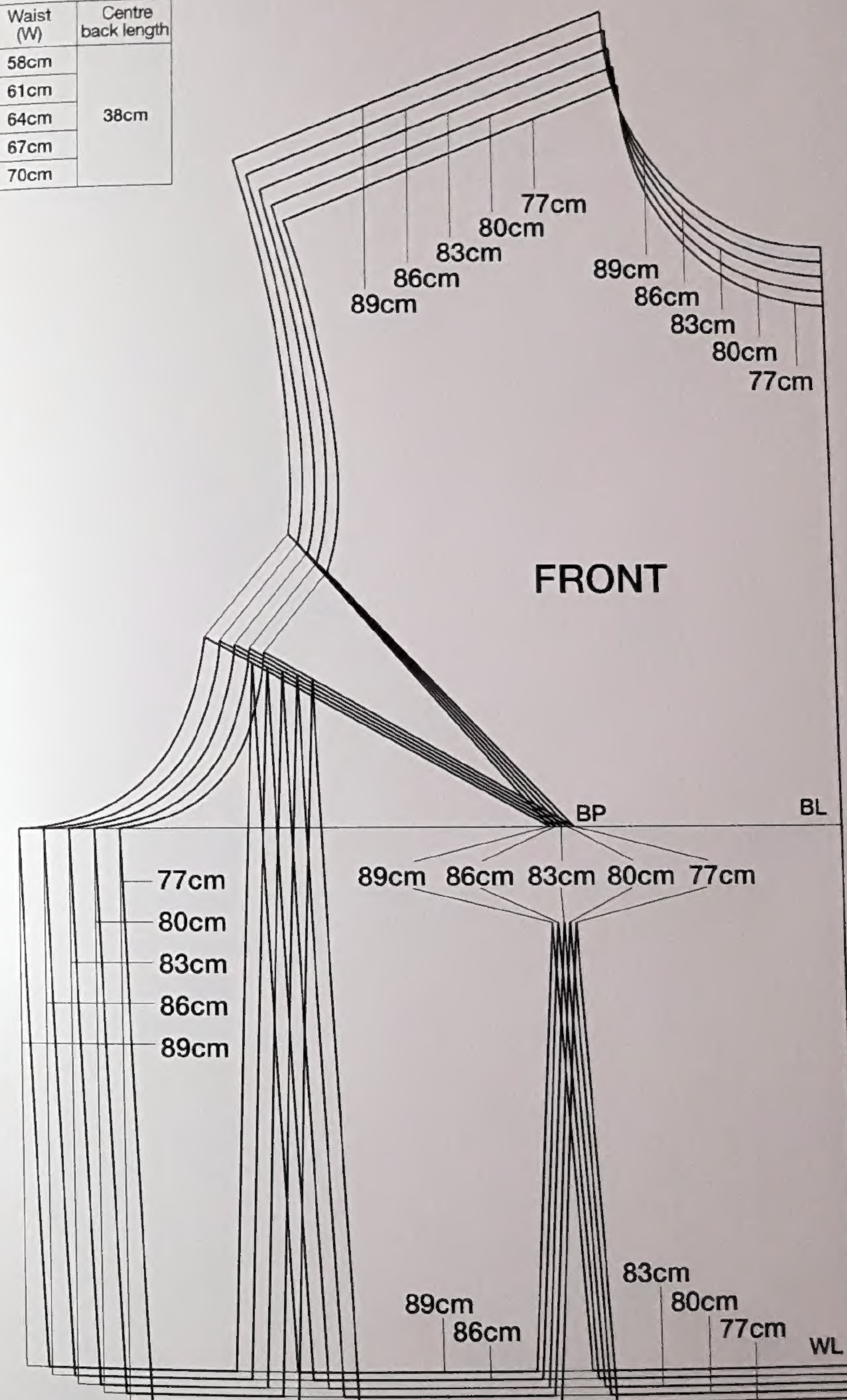


Bunka-style sloper (block) for an adult woman (size M) (half-scale)

Copy at 200% on a photocopier to make the full-sized pattern.



Bust (B)	Waist (W)	Centre back length
77cm	58cm	38cm
80cm	61cm	
83cm	64cm	
86cm	67cm	
89cm	70cm	



In conclusion

I love the weather forecasts on TV, and often watch them. With our weather forecasts becoming increasingly smart through digitization, you could easily be tricked into thinking that you're looking down from the sky. There is, however, one TV station in Japan whose weather forecasts are analogue through and through, with everything made by hand. The clouds are made of cotton, and they pull on strings to make the sun and thunderbolts appear. Somehow I can't help preferring these forecasts. Crafting things by hand appeals to people; it stays with them. I like to think that it takes all kinds of approaches – I find it more interesting to have different choices.

I'd like to take this opportunity to offer my heartfelt thanks to Mrs Fujino Kasai for the invaluable advice she's given me ever since the first book; to the team of book designer Tomoko Okayama, photographer Masaaki Kawada, proofreader Hisako Sugita, and editor Yukiko Miyazaki, who have also been with me from the start; and to all the other people in addition to my regular team who've helped make this book a reality.

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